DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation.

Whole No. 1054 | CHICAGO, FEBRUARY 22, 1913 | Vol. 62, No. 8

PUBLISHED ON SATURDAY OF EACH WEEK BY THE
DOMESTIC ENGINEERING COMPANY
445-447 Plymouth Court, Chicago.
Long Distance Telephone: Harrison 754.

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TERMS OF SUBSCRIPTION.

United States, Cuba and Mexico, $2.00 per year.
Canada, $3.00 per year. Foreign, $4.00 per year.
Current copies, 10c each. Back numbers, 25c each.

Entered as Second-Class Matter at the Postoffice at Chicago, Ill.

"Domestic Engineering" says: A plumber may be an excellent workman, but to be a successful business man, conscientious study of business methods must have his attention as well.

CHANGING PUBLIC SENTIMENT.

SHOULD not our state and national conventions devote some of their time to a consideration of the fact that the general public believes that many plumbing contractors charge excessively for their wares and services?

If hastily answered this question is likely to receive a determined negative,

Because the proposition seems less vital than others that precedent has made part of the regular program.

Sometimes we become so absorbed in scheming out improvements in our work that we altogether forget to inquire what all that work is for.

Things that we can't see or feel, like public sentiment or good-will, are mighty hard to take seriously.

Yet many a business man or politician who couldn't, has gone bump without ever being able to analyze the disaster.

Probably the general public's opinion wasn't so far wrong at one time.

Almost everything gets overdone on its profit side in its infancy.

And plumbing is a new science—that is, comparatively new.

Likewise the end-man in the minstrel show and the funny-fellow on the newspaper had a hand in moulding that opinion.

But it is an erroneous opinion, as we all know.

Yet the rabbit has nothing on erroneous opinion when it comes to propagation.

And erroneous opinion never helped the sale of anything—not even plumbers' services.

Why not give the matter ten minutes' discussion?

Perhaps some of the newspapers would consider it good copy, and there's nothing like advertising, even against an erroneous opinion.

MOTOR TRUCK SHOW INTERESTS PLUMBERS.

THERE closed last week in Chicago the most successful automobile show yet held here. The attraction of the pleasure vehicle show, held the first week, did not, however, overshadow the motor truck display, which held the boards during the second week.

The interest shown by the plumbing and heating fraternity in this display was especially noticeable. There were in attendance members of the trade from such states as Texas, Kansas, and Minnesota, as well as many from territory adjacent to Chicago.

The inquiry from the trade was for high grade equipment, as a rule. The manufacturers and jobbers of plumbing supplies were largely interested in the three and five-ton models, while the lighter trucks appealed to the plumbers and heating men who inquired. Quite a few plumbers, however, are now considering two and three-ton trucks.

Several models were shown especially adapted for the use of plumbers and heating men, while other manufacturers advised that they were able to furnish bodies designed for this use.

For the benefit of those who were unable to attend the show, "Domestic Engineering" will take pleasure in answering inquiries relating to the various makes of motor trucks and will endeavor to be of assistance to those who contemplate such purchases.

Illustrations of trucks just purchased by Chicago jobbers are shown on another page.

Plumbing in Greenpoint Hospital, Brooklyn

The Department of Public Charities of Greater New York Has Adopted the Most Modern Methods in This Building

WORK has recently been started on what is to become one of the finest of Brooklyn hospitals and which, before completion, will cost about $375,000. This hospital is know as the Greenpoint Hospital and is located on Bullion street, between Kingsland avenue and Debevoise avenue. The erection of the building is being made by the Department of Public Charities, of which the Hon. Michael Drummond is commissioner, in accordance with the plans and specifications prepared by Frank J. Helmle, architect, of Brooklyn, the engineer for the work being Frank Sutton, of New York City.

Plumbing Work.

The plumbing work on this hospital, which will cost about $39,000 is being performed by James Harley & Co., of Brooklyn, N. Y.

Drainage System.

The house sewers and underground plumbing pipes are of extra heavy cast iron and likewise all fresh air pipes. A complete layout of the basement drainage lines is shown in Fig. 1. The vertical lines of the entire soil, waste and vent system except where connections are made to fixtures is of galvanized wrought iron supplied with Y and T's recessed drainage fittings at points required, and an elevation of a few typical risers is shown in Fig. 2.

The outside leaders are connected to the drain with cast iron pipe, commencing 5 ft. above the grade, while all inside leaders are of galvanized wrought iron. The branch waste and vent pipes are of heavy galvanized wrought iron with recessed fittings, no lead being used except for water closet bends and vent connections. All the exposed piping at or near the fixtures is in general of nickel-plated brass.

The traps for the house sewers are of extra heavy cast iron, with two cleanouts closed with brass cleaning screws. The main traps have a fresh air inlet connected on the house side, and all leaders are trapped before being connected to the house drain. The wash basins have 1½-in. traps, the slop sinks 3-in. iron traps in general, ordinary sinks 2-in. brass traps, and urinals 2-in. traps cast in the bowl, while water closets are trapped in the bowls with earthenware traps. Cleanouts are provided on the drainage system with brass screw caps set in graphite and oil, and all water closets and slop sinks with earthen trap standards are set in heavy brass screw floor flanges.

The inside floor cesspools, excepting those in the toilet rooms and a few other cases, are of a spherical shape with a 3-in. outlet and a locked strainer supplied with hot and cold water.

The toilet room partitions for the urinals, showers, water closets and other fixtures, and also the marble work for the sinks, are constructed of first quality gray Tennessee marble of 1-in. thickness and of a single piece. All fronts are 2 in. thick and are set into the floor, while the partitions start 6 in. above the floor level and have an average height of 6 ft. 6 in., with caps 2 in. high and 3 in. wide. A layout of a typical toilet room and its soil, waste and vent piping, is given in Fig. 3.

Fixtures.

The plumbing fixtures to be installed in this hospital are briefly outlined below:

The water closets are deep seal syphon jet, with non-soiling flushing rim and concealed jet, and with the sanitary perfect screw connection; polished birch-stained mahogany seat, with nickel-plated hinges, nickel-plated brass flush valve, with integral stop valve; nickel-plated brass connections to wall.

There are also some water closets same as above described, but without the raised porcelain front and fitted with white non-split seat and cover.

There are also some syphon wash-down water closets

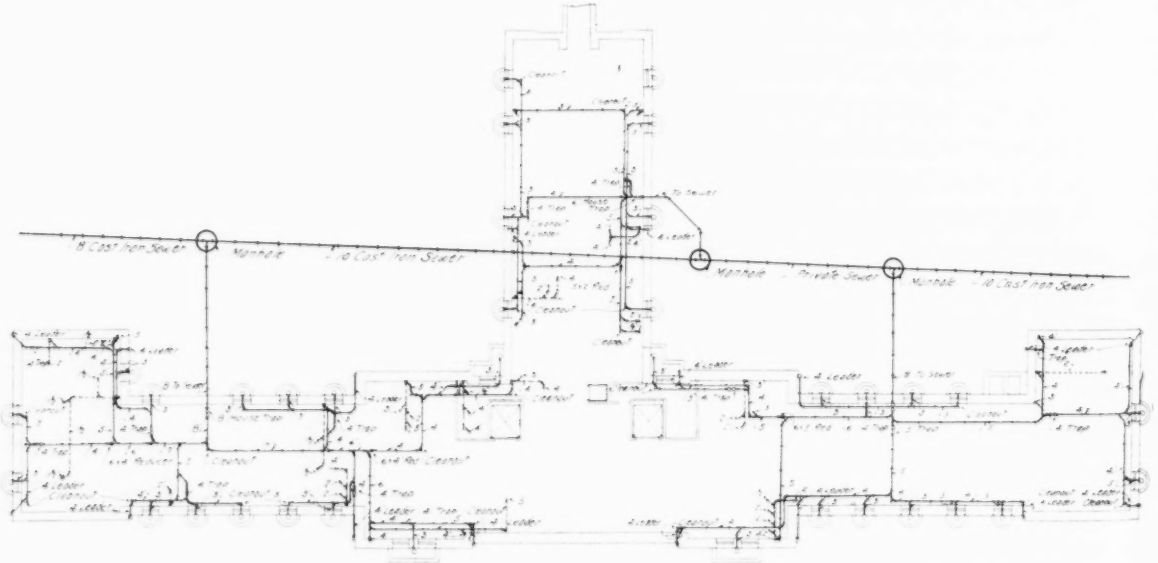


Fig. 1. Basement Plan of Drainage and Private Sewer.

with integral porcelain seat and the sanitary perfect screw connection, with nickel-plated push-button flush valve, with integral stop valve and with nickel-plated connection to wall.

Other water closets are syphon wash-down, with sanitary perfect screw connection, birch-stained mahogany seat; nickel-plated brass push-button flush valve, with integral stop valve and connections to wall, with escutcheons.

The urinals are vitreous porcelain lipped with brass trap for 2-in. iron pipe and vitreous porcelain trap shield, fitted with nickel-plated inlet coupling; nickel-plated push-button flush valve, with nickel-plated stop valve, lock shield and stem for detachable key; not local vented.

The baths are porcelain, 5 ft. 4 in. long, with glazed exterior; nickel-plated high bell nozzle combination supply and waste fittings, with nickel-plated sprinkler and rubber tube.

There are also some enameled iron roll rim baths 5 ft. 6 in. long, with exterior finished white; nickel-plated brass high bell nozzle combination supply and waste, with china name plates marked "Hot" and "Cold" and with nickel-plated supply pipes to floor, with unions.

The lavatories are extra heavy vitreous porcelain 24 x 19 in., with integral back and wall support and with china caps for the bolts at back; nickel-plated brass waste plug and coupling and nickel-plated waste; nickel-plated slow self-closing push-button faucets, with china name plates marked "Hot" and "Cold;" nickel-plated brass adjustable trap to wall for 1½-in. iron pipe.

There are also some extra heavy vitreous poreclain lavatories, with integral backs, ground to set against wall and with concealed supporting brackets, size 27 x 24 in. with nickel-plated goose-neck nozzle with rose spray; nickel-plated clover knee action supply valves; with stirrup angle, nickel-plated supply pipes to wall, with stop valves; nickel-plated lock shields, nickel-plated supply pipe from valve to nozzle; nickel-plated clover knee action waste; nickel-plated adjustable trap to wall for 1½-in. iron pipe.

There are also some extra heavy vitreous porcelain lavatories 27 x 22 in., with vitreous porcelain pedestal nickel-plate combination supply and waste, with china name plates marked "Hot" and "Cold;" nickel-plated adjustable trap to wall for 1½-in. iron pipe; nickel-plated supply pipes to wall with angle stop valve, with nickel-plated lock shields.

The double lavatories are 54 in. long and 25 in. wide by 14 in. deep, of porcelain, with two bowls and with porcelain legs; two nickel-plated goose-neck nozzles, with rose sprays; two nickel-plated clover knee action valves and stirrup handle and with nickel-plated supply pipes to wall, with stop valves, with lock shields and nickel-plated supply pipe from valve to nozzle and nickel-plated clover knee action waste; two nickel-plated brass adjustable traps to wall for 1½-in. iron pipe.

The sinks are porcelain roll rim 36 x 23 x 7 in. deep, with porcelain legs and reaches to wall; nickel-plated brass ⅝-in. long shank compression sink, Fuller faucets; nickel-plated brass 2-in. adjustable trap to wall for iron pipe; nickel-plated standing overflow and waste in recess in back of sink.

There are also vitreous porcelain sinks 25 x 17 x 5½ in. deep with nickel-plated waste plug and coupling; chain stay and stopper; supported with enameled iron standard; supply hot and cold water through nickel-plated compression goose-neck faucets, with china name plates marked "Hot" and "Cold;" waste through nickel-plated brass adjustable trap to wall for 2-in. iron pipe. These sinks are equipped with drain boards.

The sinks in kitchen and scullery are wrought iron 36 x 24 x 18 in. deep, with waste plug and coupling and galvanized iron P trap to wall; each compartment is supplied with hot and cold water through ¾-in. Fuller pattern faucets, with all-metal handles and hose end on cold faucet. Sinks are supported with wrought iron frames and legs and waste through galvanized iron 3-in. connections and grease trap; porcelain lined inside and white enamel painted outside, equal to the finish as applied to bathtubs and have 2-in. galvanized iron connections to wall.

The sinks in scullery are same type, but of four compartments, supported with galvanized iron frame with flange standards. The supply pipes set above partitions

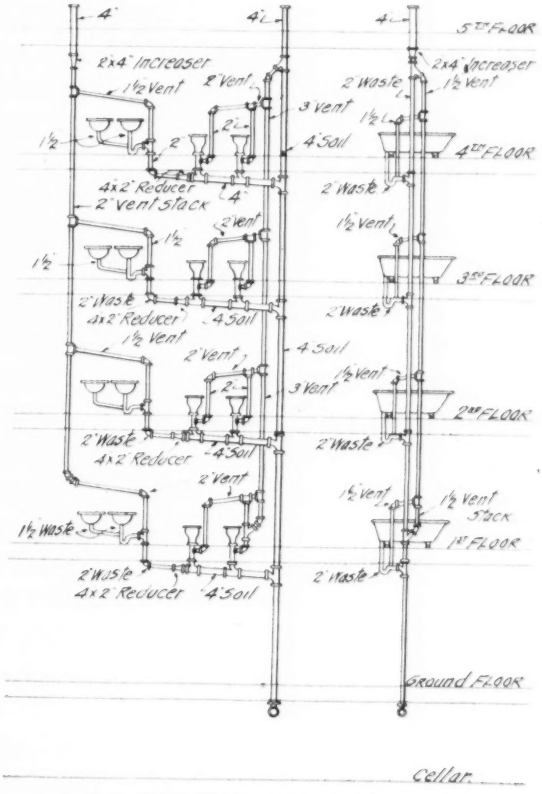


Fig. 2. Typical Soil, Waste and Vent Risers.

and have stop valves with stems for detachable keys and lock shields.

The drain boards are of heavy grooved ash, with curbs and polished brass angle clamps and polished brass rods with nuts; supported with 1½-in. diameter galvanized iron standards, with heavy flanges at floor.

There are also sinks of extra heavy vitreous porcelain 30 x 26 in., with vitreous porcelain legs; nickel-plated brass waste strainer, plug and coupling; nickel-plated brass 2-in. adjustable trap to wall for iron pipe; nickel-plated brass ⅝-in. compression sink faucets, with china name plates marked "Hot" and "Cold," with ash drain board, nickel-plated brass wall hinges and telescopic legs.

There are also some porcelain sinks with porcelain legs; nickel-plated brass wall supports; nickel-plated clover knee action supply valve, with stirrup handle and

nickel-plated low-down spout; pipe from valve to spout and supply pipes to wall, with stop valves, nickel-plated lock shields, nickel-plated brass 2-in. adjustable trap to wall for iron pipe.

Another type of sink is of procelain 36 x 23 x 7 in., porcelain legs; nickel-plated brass wall supports; nickel-plated clover knee action supply valves, with stirrup handle, nickel-plated goose-neck with extra large removable rose spray; 8½ x 2½ in. nickel-plated supply pipes to wall, with stop valves, with nickel-plated lock shields, nickel-plated supply pipes from valve to goose-neck, nickel-plated clover knee action waste; nickel-plated adjustable trap to wall for 2-in. iron pipe.

Another type used is a porcelain sink 30 x 27 in., with nickel-plated standing overflow and waste in recess at end; nickel-plated brass standard; nickel-plated brass goose-neck compression pantry sink faucets, with china name plates marked "Hot" and "Cold;" nickel-plated brass 2 in. adjustable trap to wall for iron pipe; nickel-plated supply pipes to wall, with angle stop valves, with nickel-plated lock shields.

The flushing rim sinks are extra heavy vitreous porcelain with integral overflow, size 16 x 20 x 10 in. deep with 2 in. brass waste plug and vitreous porcelain strainer, nickel-plated brass ¾-in. angle valves to control supply to flushing rim and nickel-plated brass combination compression supply faucet, with china name plates and procelain standard; nickel-plated brass 2-in. adjustable trap to wall for iron pipe; sink fitted with oak drain board, with white enamel bracket.

There are also used some enameled iron roll rim sinks 30 x 20 x 6 in. deep, with integral back; cast iron legs; nickel-plated brass waste strainer, plug and coupling; nickel-plated compression Fuller faucets, with all-metal handle; nickel-plated brass 2-in. adjustable trap, with nipple to wall, with iron pipe The exterior of sink and legs is white enamel painted of the same finish as applied to bathtubs.

A few galvanized iron sinks are 24 x 20 x 12 in., with open strainer and patent overflow; galvanized iron back and legs; polished brass ⅝-in. tee handle compression faucets, with hose end on cold faucet, galvanized iron P trap with nipple to wall threaded for iron pipe.

The last type of sink is an extra heavy vitreous with integral back and trap to wall, with nickel-plated flush valve, with integral stop valve and nickel-plated brass supply pipe from cleansing jet to wall, with rough brass hot and cold supply valves, with removable bonnets, with china name plates marked "Hot" and "Cold."

The slop sinks are vitreous porcelain roll rim 24 x 20 x 12 in., with trap standard and nickel-plated brass waste strainer, trap standard with nickel-plated brass combination compression faucets, with china name plates marked "Hot" and "Cold" and with pail hook and brace to wall, trap standard to be white enamel painted, same as the finish applied to bathtubs.

The showers are nickel-plated 5-in. diameter rain-head type, with cast brass removable slotted face and nickel-plated brass new model mixing valve, with index plate shower with adjustable ball joint. The mixing valve is placed on the side wall and fitted with nickel-plated stop valves, with nickel-plated lock shields and with nickel-plated mixing column from control valve to shower head; each stall is fitted with a nickel-plated brass 5-in. waste strainer with 3-in. plug and coupling and with nickel-plated brass 1½-in. curtain rod with end flanges and nickel-plated snaps and white duck curtain. The curtain is weighted at bottom with shot.

The washtubs are porcelain 30 x 26 in. with porcelain legs; nickel-plated brass waste strainer, plug and coupling, with china stay and stopper, nickel-plated brass ⅝-in. compression faucets, with china name plates marked "Hot" and "Cold." The washtubs have nickel-plated 2-in. adjustable trap to wall for iron pipe, and those in batteries have nickel-plated 2-in. waste pipe with ½ S trap to wall, with heel inlet on one tub and with waste on other tubs in the battery connecting with this trap.

Water Supply System.

The water pipe is of standard weight galvanized iron pipe, the fixtures supplied with water on the basement, ground floor, and first floor being under direct pressure, and the fixtures in the second, third, fourth and fifth floors being supplied from a pressure tank system located in the cellar. A layout of the pressure tanks, pumps, etc., is shown in Fig. 4. All the main lines of supply pipes with their branches are of galvanized iron, as previously stated, but flush pipes are nickel-plated brass.

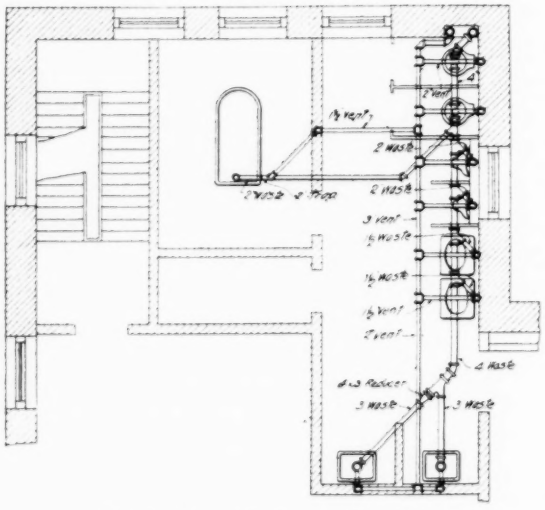


Fig. 3. Typical Bathroom and Piping.

Where the water pipes are exposed to the weather or liable to freeze they are covered with cork covering. The hot water is supplied from a system independent of the two various cold water pressures, and the main hot water supply line to the building is extended through the funnel to a hot water service heater outside of the structure. Wherever the hot and cold water lines are run parallel to each other they are separated by at least 6 in. or else the hot water lines are covered with an insulated covering. All the riser lines starting from the basement on both the hot and cold water system are separately controlled by gate valves at the base of the line.

All the hot water piping is installed with circulating returns, the circulating line paralleling the riser line and the main circulating return is carried back to the mouth of the tunnel. In general the water piping is carried in recesses and under the flooring, and when carried under the floor is placed in trenches with a space around to allow for expansion and contraction. All the hot water lines placed under the floor are covered with insulating material.

The cold water supply is brought in from the cast iron main located in the street through a 4-in. line which separates in the basement into branches running to the

plumbing fixtures, storage tanks, etc. A water meter is set in the main service line with gate valves and a fish trap. On the house side of the meter is provided (in connection with the cutoff gate valve) a horizontal swing check, which is placed between the meter and the gate valve.

In the basement is set up a double tank storage system, as shown in Fig. 4, consisting of 2 water tanks, 1 air tank, 1 water pump, 1 air compressor and a pressure-controlling device. This system has been proportioned so as to meet the following requirements:

The combined water storage capacity of the two tanks is about 8,000 gallons; the combined capacity of 1 air tank when charged with compressed air at a maximum pressure of 125 lbs. is such as to yield an expulsive force which is sufficient when operating on the water in the water tanks (and while the water pump and air compressors are at rest) to discharge all the water in the water tanks under a steady and uniform maximum pressure of 40 lbs.

The air compressor takes the air from the water tank under the pressure maintained and which air has passed over and into the water tanks from the air tank through the pressure-regulating device while the water tanks are being discharged and returns such air into the air tank.

The pump for supplying the water for the storage tanks takes the water from the suction tank or street main connection and pumps it into the tanks against the pressure which they normally carry. On the line of the communicating air pipe between the air tank and the water tank a device is provided which regulates the flow and the pressure of the air in order to maintain a uniform maximum pressure of 40 lbs. upon water in the water tanks during the time in which they are being discharged. The general features of the water and air tanks are briefly as follows:

Each tank is 6 ft. in diameter and 20 ft. 4 in. in length over all. The heads are dished and of ½-in. thickness on the air tank and 7/16 in. on the water tanks. The shells have horizontal seams with butt joints, double strapped and triple riveted, with vertical seams single riveted. The hells for the air tank are made of 13/32-in. metal and of 5/16-in. metal for the water tanks. On the bottom of the water tanks is placed a 4-in. flanged steel nozzle for water pipe connection, and in the side of both the air and water tanks is located a 11 x 15 in. manhole. On the head of each water tank is placed 2 sets of ½-in. gage glass fittings.

The water pump is a 5¼ x 7 x 4½ x 10 in. compound steam pump with a capacity of about 125 gallons per minute at 100 lbs. pressure when supplied with steam at 90 lbs. The pump has brass-lined water cylinders, bronze piston rods, iron water piston fibrous packed, brass seats, stems, valve covers, springs and high-grade rubber valves with cold water. The discharge line between the pump and the water tanks is of 4-in. with a check valve at each water tank, while the suction line is also 4 in. and has a gate valve. The pump is supplied with 1¼-in. steam and has a 2-in. exhaust.

The air compressor consists of a 6 x 5 x 5 in. "Duplex," steam driven, fork frame compressor operating at 150 revolutions per minute and having a displacement of 27 cu. ft. of free air with a terminal pressure of 125 lbs. with a pressure on the suction of 40 lbs. and operating under 90 lbs. of steam. Compressor is supplied with steam through a 1¼ in. connection and has a 1½ in. exhaust. A 1½-in. air pipe is run between the air compressor water tanks and air tank with globe valve on the suction and discharge lines and free air connections at the air compressor for the pipe to air the filter room. On the air line between the water tanks and the air tank is placed a 1½-in. pressure regulating valve and a controller.

All the piping used on these lines, both water and air, is standard weight wrought iron pipe galvanized, the fittings up to and including 2 in. being of cast iron galvanized screwed, while above 2 in. they are galvanized flanged, all being standard weight. The valves up to and including 2 in. are brass body screwed and over 2 in. are iron body flanged.

Fire Protection System.

A system of fire lines is installed which protects the entire building being connected with the storage tank system, the street main in the basement, and with a Siamese connection at the front of the building as shown in Fig. 4. All pipe used on this system is genuine wrought iron, full weight black pipe with extra heavy couplings. At each outlet is placed a hose valve and a hose rack nickel-plated with a supply of 2½-in. double jacketed cotton rubber lined hose capable of standing 400 lbs. per sq. in. All the nozzles are of the Underwriters pattern with swivel handle and smooth tapering thread being 30 in. long and having a 1⅛-in. board.

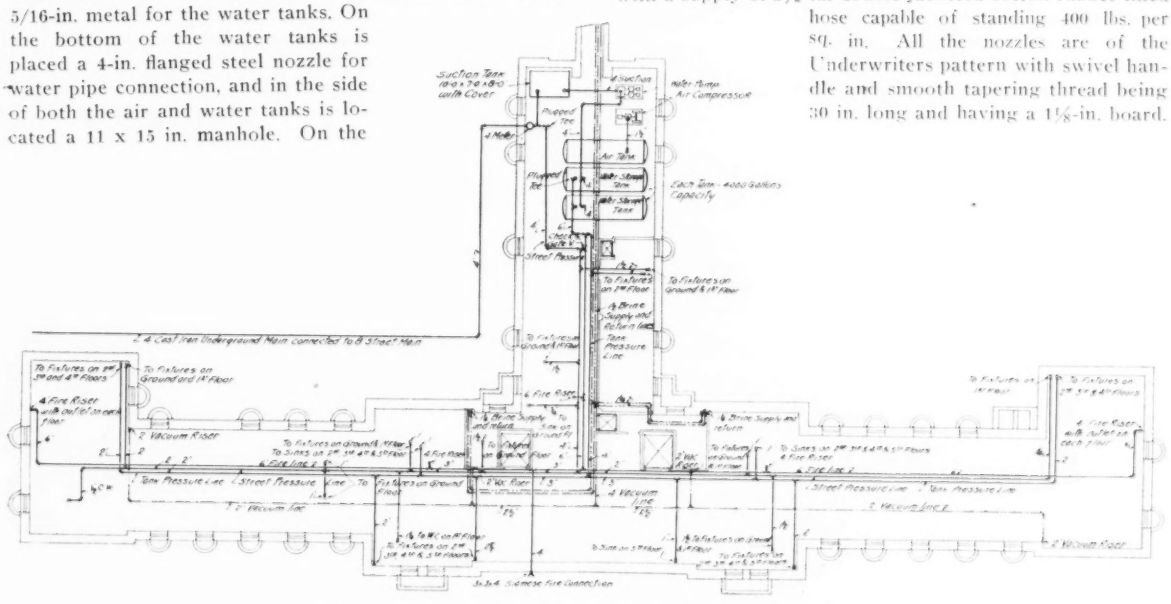


Fig. 4. Basement Plan of Water, Fire, Brine and Vacuum Piping.

Water—Its Properties and Practical Uses

III.—Pumps and the Principles of Atmospheric Pressure, With the Application of Pneumatic Systems, are Here Described

By F. W. TOWER

About Pumps.

FIGURE 1 is intended to show by the arrows how the atmospheric air presses down on the water, and, as the piston in the cylinder, or barrel, is moved up, a slight vacuum is formed, which is immediately filled by the water in the receptacle, or well, due to the weight of the atmosphere of 14.7 pounds per square inch.

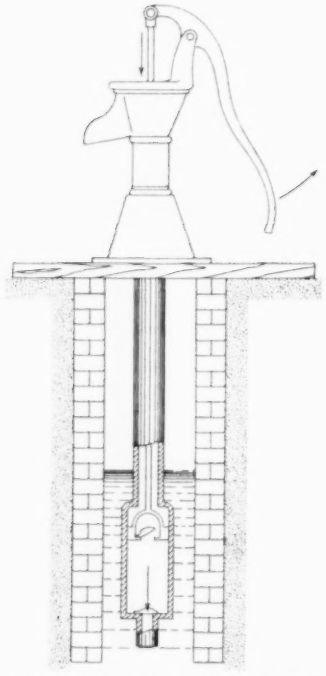


Fig. 1. Showing How Atmospheric Pressure Acts on the Water in the Well.

Applying the same principle to the pump as shown in Fig. 1: A lower disc, or valve, resting on a flat surface, is held down by its own weight.

The piston with the upper box or valve, when moved upward, will tend to lift the lower valve from its seat, and if a tube is extended downward to water, not exceeding 33 feet vertically, a continued operation of the piston will eventually exhaust the air between the lower valves and the surface of the water in the well, and the water will follow to fill the vacuum.

This water is lifted by the atmospheric pressure on the water as shown in Fig. 1.

Fig. 2 shows the ordinary suction pump.

(a) Pipe to water in well. (b) Lower valve in pump. (c) Upper valve or piston, operated by the brake or handle. (d) A metal disc with central guide pin acting as a bucket to lift the water after rising through the lower valve.

The Force Pump.

The Force Pump differs from the Lifting Pump in several important particulars, but chiefly in the fact that the piston is solid; that is, it has no valves.

The water is drawn up the suction pipe, (as already described), when the piston rises; but when the piston reverses, the pressure on the water, caused by the descent of the piston, opens the valve *B* and forces the water up the delivery pipe.

When the piston again begins its upward movement, the valve is closed by the pressure of the water above it, and the lower valve is opened by the pressure of the atmosphere on the water below it.

Water may be forced to almost any desired height. No stuffing box is required for this pattern.

Fig. 3 represents the

Single Acting Force Pump.

(a) Lower valve. (b) Upper valve. (c) Piston, solid. (d) Pump barrel.

Action. When the pison *C* is raised, valve *A* opens and water flows into the pump barrel *D* and valve *B* closes.

When the piston *C* is pressed down, valve *A* closes and valve *B* opens.

When valve *B* opens, the water in the pump barrel below the piston is pressed past valve *B* until the piston is below the branch outlet.

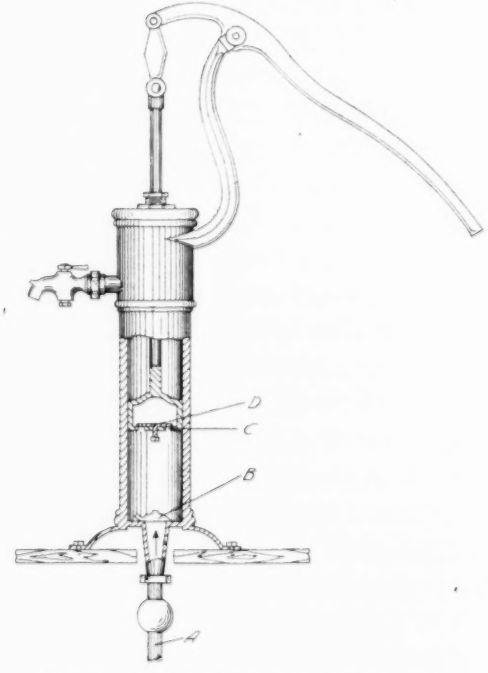


Fig. 2. Principle of Ordinary Suction Pump.

As the piston is again raised, valve *B* closes and valve *A* opens as before.

This operation being repeated, all the water forced through or above valve *B* rises to the elevation desired, being prevented from returning to the pump cylinder by this valve.

Double Acting Force Pump.

In the pumps previously described, the discharge was intermittent; that is, the pump could only discharge when the piston was moving in one direction.

In some cases it is necessary that there should be a continuous discharge; in all cases it takes more power to run the pump with an intermittent discharge.

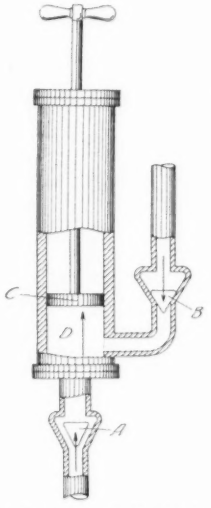


Fig. 3. Illustrating Principle of Single-Acting Force Pump.

If the water is to be raised to a considerable height, its weight will be very great, and the entire mass must be put in motion during one stroke of the piston.

To obtain the advantage of a more continuous discharge, double acting pumps are used.

The double acting pumps have duplicate valves and passages so that a lift and discharge are obtained by each motion of the piston.

A suction and discharge is produced at each stroke, thus causing a continuous stream which is rendered more uniform by an air chamber.

Air chambers should be installed on the discharge or delivery pipe.

Fig. 4 illustrates the working principles of the double-acting force pump.

(a) Pipe to water in well. (b) Lower valve opens when piston *G* is moving towards the brake or handle. (c) Upper valve closes as piston moves towards handle. (d) Air chamber to cushion water column. (e) Lower valve closes when piston is moving towards it. (f) Upper valve opens as piston moves towards it.

The water in that part of the cylinder moving towards valve *F*, is forced through to the air chamber and to the tank or receiving reservoir.

When the piston is reversed, valves *F* and *B* close, and *E* and *C* open.

In this manner water is being drawn into and expelled from the cylinder or barrel, at each stroke of the piston or brake handle.

The Lift Pump.

The notable difference is in the location of the cylinder, which is submerged in the water at the lower end of the pump pipe.

There is no air below the plunger to exclude, and thus the water is lifted by successive strokes through the pump pipe, as with the ordinary type.

Of the two, this type works better, as the parts constantly submerged are tighter, but it is more expensive and harder to get at than the "Suction" pump, which has all its working parts above the well within easy reach.

For deep wells the "Lift" pump with air-chamber attachment is excellent.

Air Chamber.

Air Chambers are used upon lines of pipes to cushion the shock which accompanies the sudden stoppage of the water column, or the irregular movements of the water within them.

All natural water carries some air or gas in solution.

An air chamber tends to promote a uniform discharge and also equalize the strain upon the pump and prevents shocks due to the incompressibility of water.

To obtain a continuous flow of water in the delivery pipe, with as nearly a uniform velocity, an air chamber is usually placed in the delivery pipe of "force" pumps as near to the pump cylinder as the construction of the machine will allow.

The air chamber being filled with air, the water compresses it during the discharge.

During the suction, the air thus compressed, expands and acts as an accelerating force upon the moving column of water, a force which diminishes with the expansion of the air and helps to keep the velocity of the moving water column more nearly uniform.

The Windmill Pump.

Windmill force pumps connected by rods to a wind wheel depend upon the action of the wind, which is intermittent and quite unreliable, thus requiring large storage tanks.

In order to get ample pressure by gravity they require an elevation which demands a strong frame to support the weight of the water stored.

The water freezes in winter, becomes warm and germ laden in the summer, and repairs are a big item of expense.

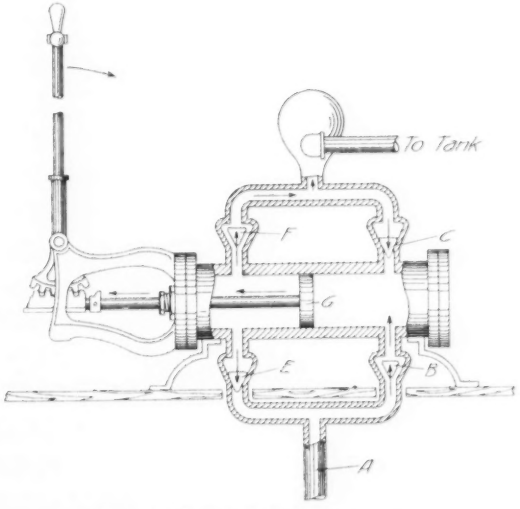


Fig. 4. Double-Acting Force Pump.

On account of the constant exposure, the elevated tank is subject to rapid decay and its life is comparatively short.

The attic tank does not give sufficient pressure to assist any in fire protection.

Until within a few years this method seemed to be the only feasible one, for isolated country communities.

Recently the action of compressed air, an old principle, is (now) being installed under the

Pneumatic Water Supply System.

Pneumatic (air) pressure may be employed to convey water to a building by simply forcing the water into a large closed

receiver or vessel, furnished with an inlet and outlet pipe so attached that the air will be locked in the vessel and cannot be forced out with the flow of water.

Water from a cistern or well is pumped into an air tight tank, (steel.)

If in a cellar, both water and pressure gauges are more accessible for observation. When the tank is being filled, the air within it is compressed, and upon expanding extends the pressure equal to the amount of the volume.

An air tight metal cylinder *A*, having an outlet pipe *D*, and inlet pipe *B*, connecting to the delivery pipe *C*, of the force pump shown, the outlet pipe *D*, leads to the house to be supplied with water under pressure.

A check valve *E* prevents the water in *A* from flowing back into the pump cylinder or out of the draw off cock *F*, above the surface of the ground.

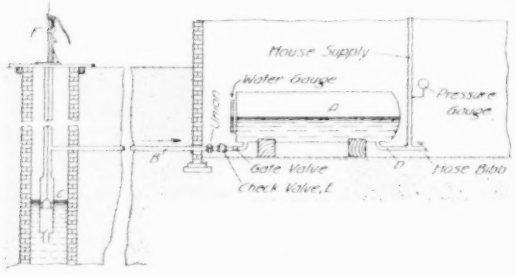


Fig. 5. Pneumatic Water System.

The pump cylinder is shown under water in the well, and is single acting, raising water only on the up stroke of the plunger.

Air is pumped in with each stroke.

An automatic air valve should be installed on pipe from pump.

The water gauge shows to the operator when the cylinder is low and needs replenishing.

An average pressure of 40 pounds may be obtained, which would elevate the water 92 feet vertically in the pipes.

(40 lbs. by 2.3 equals 92.)

This is a practical and reliable system for a country residence, hotel, institution or any other use where city water service is not obtainable.

Pnuematic supply furnishes:

1. Plenty of water, if well has capacity.
2. Cool water in summer.
3. No freezing, no exposed tank in air.
4. Fire protection.
5. No more expense than city service.
6. Decrease in insurance rates.
7. A plant that will be as desirable and inexpensive as any city pressure service.

Disadvantages.

1. The pressure will be irregular, gradually decreasing as the water falls in the tank.

2. Unless provision is made to force air into the cylinder, it will become absorbed by the stored water.

The first disadvantage is largely overcome by the use of a large tank, which furnishes a steadier pressure than the smaller sizes.

The second objection is overcome by the manufacturers who now build pumps with air compressors or other devices to supply a small amount of excess air to the tank from time to time.

(To be continued.)

THE MAN WHO DOES NOT READ.

He is very likely to be a little conceited and think that he knows just how to do things without help from any outside source.

He is inclined to think disparagingly of a "book" engineer or machinist, as he sees fit to call the man who reads and tries to keep posted and up with the times.

He is generally the first to condemn any new appliance that comes out. When the air brake was first introduced, we heard such an engineer denounce it as a "nuisance, and too much trouble; the engineer had enough to see to, without being brakeman."

When the automatic air brake first came out, the construction of the air pump was a great puzzle to the ordinary engineer and repair mechanic. At that time Allan McDuff, afterward general foreman of the B., C. R. & N. Railway shops at Cedar Rapids, Iowa, had charge of all mechanical mysteries. To solve the air pump details he consulted Appleton's Encyclopedia of Applied Mechanics and gained wisdom. By following up what he had learned in that book he became the best-informed man in Iowa concerning air brakes.

Not long since, one of our Western roads applied a few sight-feed lubricators to some of their locomotives. The man whose duty it was to explain to the engineer how to operate them had not carefully read the directions sent with the cups and was so totally ignorant of one very important valve, the intelligent use of which was essential to the successful working of the lubricator. The manufacturer had to send out an expert to save the reputation of one of the best appliances ever added to a locomotive.

A man who reads was placed in charge of one of our modern automatic stationary engines. The valve, and what was inside of the steam chest and cylinder, he had never seen, and, of course, knew nothing of its construction. He sent to the builder and procured a "descriptive catalogue," and in one evening by its perusal, he obtained a good idea of what was going on inside of that engine.

The man who does not read wonders what is inside, but does not find out until it is torn apart, and even then he does not get the builder's idea, and know why it is so made. It takes him weeks, months, or years to find out what a few hours of study would enable him to ascertain.

How many inventors spend long sleepless nights in "getting up" something, and then find out that the thing won't work, because it is not constructed in accordance with the laws of mechanics.

We know of a man holding a high official position on one of the largest railroads of the West who built, at a great expense to the company, a hydraulic piledriver, which, with two men, was to do the work of a ten-horse-power engine. He had seen the tremendous force exerted by a hydrostatic wheel press, and concluded that this was just the power to lift a piledriver ram, and as the pump was so small, two men could easily work it. It is needless to add that the result was a failure, and an addition to the scrap heap.

This is a fast age, and the man who expects to keep pace with the times must not expect to find out everything by the slow coach of experience, but take advantage of the delving of others, as it may be condensed in their writings. It saves time, hard work and many mistakes. —Railway and Locomotive Engineering Magazine.

Modesto, Cal.—The firm of Van Aken & Trueblood has purchased the entire plumbing stock of C. A. Galvin.

Questions and Answers

WHAT IS WRONG WITH THESE INSTALLATIONS?

Editor "Domestic Engineering":—Will you please tell us what will correct this heating apparatus? The gas heater will work all right but the hot water back will not

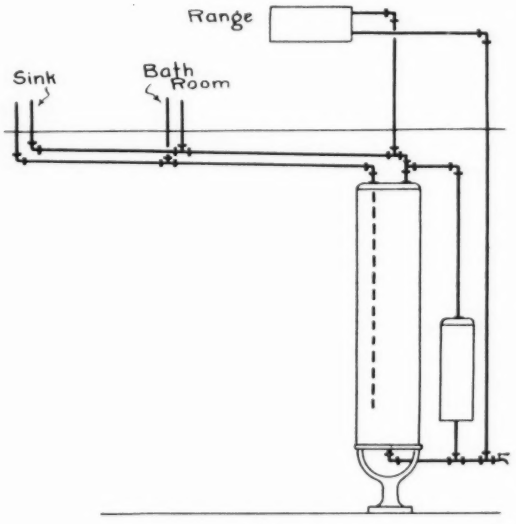


Fig. 1.

circulate the water either through the tank or through the gas heater, in fact it will not circulate at all. In-

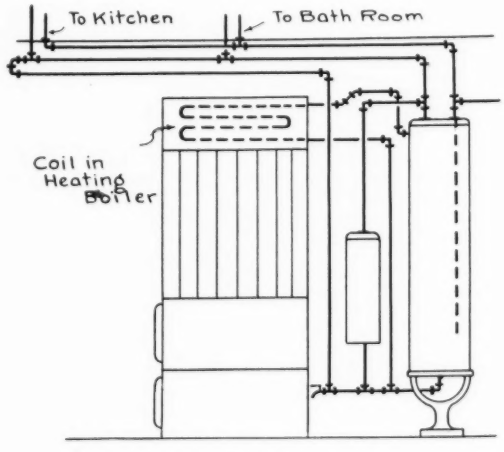


Fig. 2.

stallation No. 2 will not heat the boiler down to bottom with the coil in heating boiler. What is the trouble?

Noblesville, Ind. Contractor.

In Figs. 1 and 2 we illustate the two hot water supply systems that "Contractor" is having trouble with. In the case of Fig. 1 there is little wonder that poor results are obtained from the hot water back, for it is not piped correctly. It should be remembered that when the range is above the boiler, it is in an unnatural position, and that it is not natural for hot water to flow downward freely. In order to make the hot water from the range flow down to the boiler, it is necessary to carry the flow pipe from

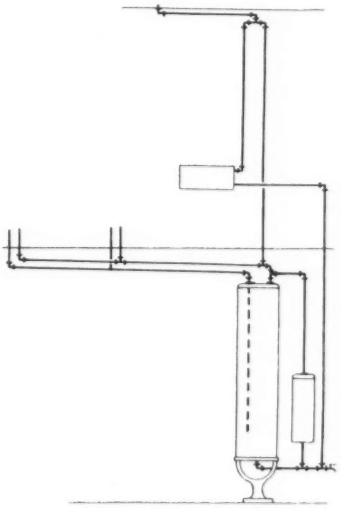


Fig. 3.

the range at least to the ceiling before dropping down to the boiler.

The proper connection is shown in Fig. 3. If the loop can be carried above the ceiling, the job will work so much the better. The great trouble with this work is that air will collect at the high point and prevent circulation. If possible, take off a connection to some fixture above, from this high point. If unable to do this, it will be necessary to place an air cock at this point which may be opened whenever the pipe becomes air-bound. "Contrac-

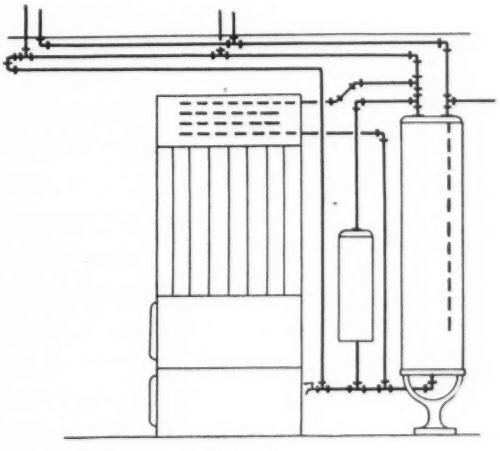


Fig. 4.

tor" should understand that at best, he cannot expect the range to do such good work as if it were in its normal location, on the same floor as the boiler.

Reference to Fig. 2 shows the flow connection from the coil in the heating boiler to the range boiler, very poorly made. No such connection should ever drop down, but

should rise throughout its course to the boiler. The coil is so high up that it is not practicable to connect it directly into the boiler, and the only proper course is to connect it as shown in Fig. 4, that is, into the flow pipe out of the top of the boiler. There is no reason why "Contractor" could not have made such a connection, as well as to have connected the gas heater in this very same manner.

SOME QUESTIONS ABOUT A FAULTY HEATING INSTALLATION.

Editor "Domestic Engineering": Will you kindly give me your opinion on the following questions described in enclosed sketch?

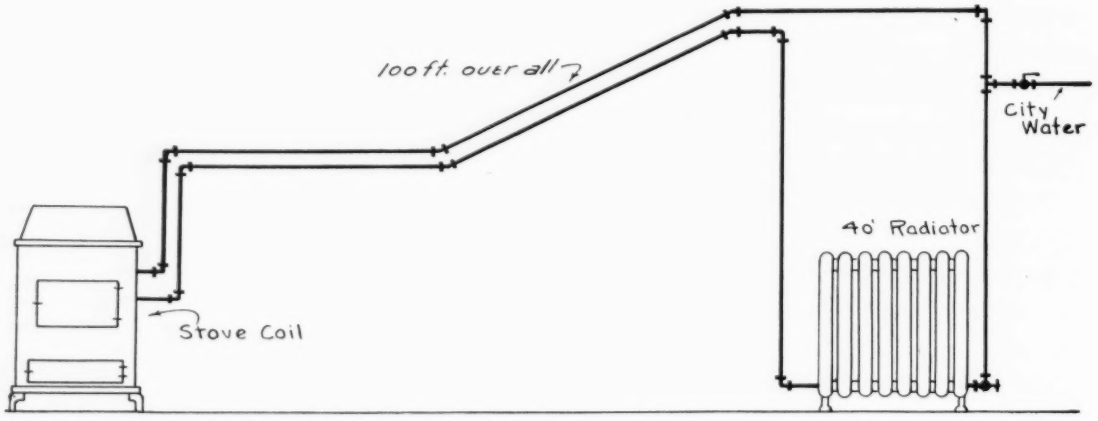


Fig. 1.

An ordinary stove in which is inserted a 1½ in. pipe forming a loop of about 2 ft. in length.

A 1½ in. pipe running through two rooms, and dropping to floor supplying a 40 sq. ft. radiator. The (supposed) return pipe rising again to the ceiling and following the flow pipe back to the stove. The air valve is in its usual place (although it does no good there), and the city water is connected direct into the flow pipe above radiator.

There is no expansion tank or relief valve of any kind.

Is the coil in the heater large enough to heat 40 ft. of radiation in addition to the 100 ft. of supply and return pipes?

Why will not the water circulate?

Is the installation dangerous?

If the pipes and radiator are full of water (I can't see how they could be), why has it not burst before this time? Do you not think that the only reason it has not burst is because it has been impossible to fill the system, and the air pocket has provided the space for expansion?

Ridgewood, N. J. B. C. W.

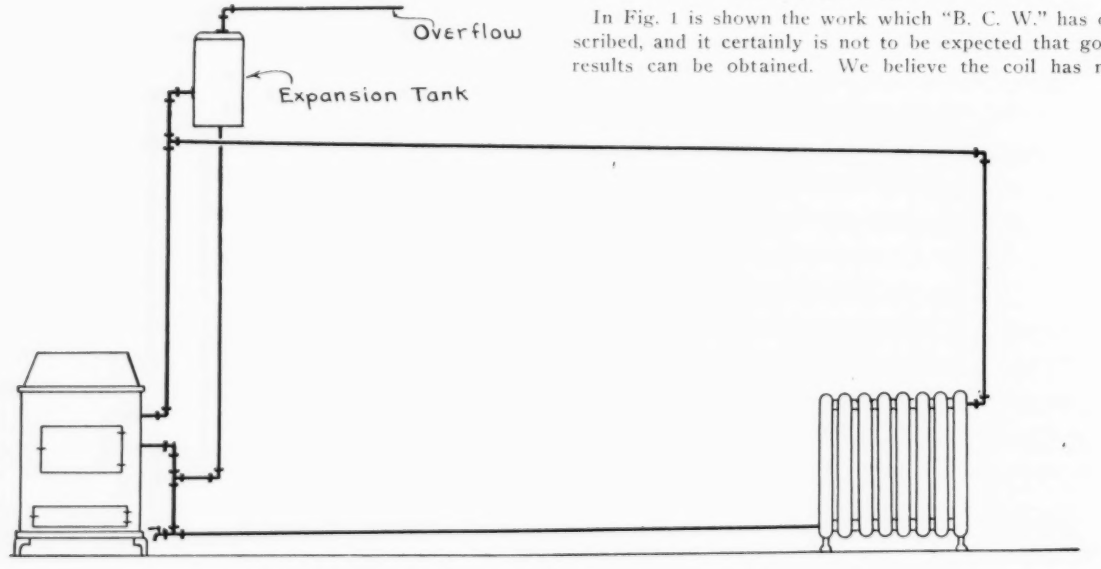


Fig. 2.

In Fig. 1 is shown the work which "B. C. W." has described, and it certainly is not to be expected that good results can be obtained. We believe the coil has not sufficient capacity for the work that it is expected to perform. It is estimated that a coil, when covered by fire, will need about 1 sq. ft. of heating surface for each 30

ft. of radiation to be heated; and as 24 inches of 1½ in. pipe in the coil which we are considering represents exactly 1 sq. ft. of surface, it will be clear that this is not enough for this job, as the radiator not only contains 40 sq. ft., but there is the long run of 100 ft. of pipe also to be taken into account.

We believe that "B. C. W." is correct concerning his belief that the air pocket may have acted as an expansion, and thus prevented disastrous results, for we do not see why all the elements of such a disaster are not present. Undoubtedly the presence of this air pocket prevents circulation also.

It should not be a difficult or expensive job to make this system perfectly safe, and to get good results from it. This may be accomplished by making connections similar to those shown in Fig. 2.

The higher the flow pipe can be carried above the stove, the stronger will be the circulation through the radiator. There can be no trouble from air if the work is connected as in Fig. 2, and there will be no need of an air vent, as all air that enters the piping and the radiator, will naturally rise to the expansion tank.

IS THERE A SIMPLE TEST FOR WATER CONTAMINATION?

Editor "Domestic Engineering": Will you kindly tell me if there is any test which I can conduct myself in order to determine whether water has been contaminated by poisonous matters or remains fit for domestic purposes. Expert chemical analyses have proven rather expensive where at least a dozen samples are to be tested.

New York. H. A. B.

The task of determining whether a certain water is sufficiently pure for people to drink, is not only a matter of scientific knowledge applied by an expert who thoroughly understands the subject, but upon it depends the health and the lives of human beings. We not only know of no simple short-cuts in the testing of water for contamination, but should not care to suggest the use of any tests that we might know, as this is a matter of too great importance to be handled otherwise than by an expert.

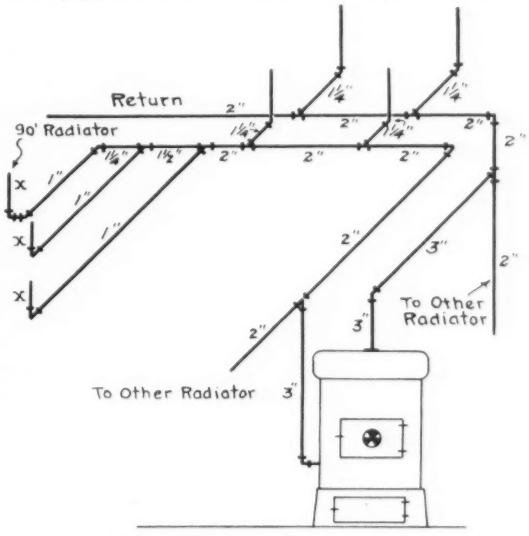
If there is any doubt whatever concerning the purity of the water we advise "H. A. B." by all means to have the water analyzed by an expert, even though an expert's fee must be paid for the service.

WILL RAPID CIRCULATION OVERCOME THIS DIFFICULTY?

Editor "Domestic Engineering": The accompanying drawing shows a heating installation that does not work properly. The radiators are located 25 ft. above boiler. Pipes are on the outside wall of building, covered with air cell pipe covering. Cross indicates radiators that will not heat. Remaining part of job heats up O. K. Kindly advise whether rapid circulation would overcome this defect.

New Haven, Conn. D. D.

Correspondent does not give sufficient information to allow us to answer him definitely. The sketch submitted shows his flow pipe marked "return," and the branches to radiators which will not heat are shown as returns. We take it that the flow pipes are same as returns, 1 in. to each of the three radiators. Sufficient attention has not been paid to the area of the piping. Beginning with the 90 ft. radiator, the three branches to radiators are each 1 in. The valve area of these three radiators then, is 3 x .78 = 2.34 sq. in., and the area of a 1½ in. pipe is 1.76 sq. in. The next radiator, 1¼ in., adds 1.22 sq .in., with a total of 3.56 sq. in., and as the area of a 2 in. pipe is but 3.14 sq. in., the main is clearly insufficient in size at this point. There is still another radiator on this line,



Heating System that Fails to Work Right.

connected 1¼ in., which brings the total required area to 4.78 sq. in., thus showing that a 2½ in. pipe, area 4.90 sq. in. should be used. Looking at this matter in another light, beginning at the boiler, the first two radiators supplied are 1¼ in. Deducting the combined area of these from the area of the 2 in. main, leaves but .77 sq. in. The area of the next branch requires more than this, it being 1 in., and requiring .78 sq. in., thus showing that none of the radiators at the end of the line, which are supplied with 1 in., have sufficient circulation.

If this is an accelerated job, using a heat generator or similar device, the piping at the end of the line is wrong, as the 1½ in. main should be continued under the connection to the radiator, and an 1½ in. x 1 in. elbow used in supplying the connection to the radiator.

Again, if this is an open job, the 1 in. connection to the 90 ft. radiator at the end of the line, is not large enough. It should be at least 1½ in.

We believe the above will show the nature of the trouble as far as we are able to advise from the information given.

Oskaloosa, Iowa.—Homer Phelps has rented the business room next east of the Globe office, and has removed his plumbing office and fixtures to the new location.

Maquoketa, Iowa.—N. J. Rankin and son, Will, have purchased the Porter plumbing establishment on East Pleasant Street, and Mr. Porter has opened a shop on Niagara Street.

Plainesville, O.—Hawkins & Jepson, State Street plumbers, have leased new and larger quarters on St. Clair Street and will move about April 1st. The change is made on account of the growing business of the company. The present quarters on State Street will be retained by the company as a store room.

Do Attractive Showrooms Justify Investment?

One Michigan Plumber Has Given Considerable Thought to This Question and His Solution Appears Herewith

SOMEONE has said that man himself is master of his own destiny. This statement is undoubtedly applicable to the master plumber who depends on his own efforts and judgment to further his business.

Up in the northern peninsula of Michigan, on the bleak and breezy south shore of Lake Superior, is the little city of Marquette, having a population of about 10,000, a bustling community and an up-to-date one. The fact that it is up-to-date can be partly charged to the activities of a certain master plumber of that city, Herman Stensrud, who in the seventeen years that he has spent as a business man there, has demonstrated to the citizens that there is real value in good plumbing work and that he is the man who can deliver the goods.

Herman Stensrud, Plumber

Mr. Stensrud is not an old man by any means, as his portrait will show. He has given a good deal of thought to the selling end of his business, with the result that he now has his own building on Front Street.

Stepping inside, one is immediately impressed with the business-like showroom display which greets the eye. There are steam and hot water boilers, electric washing machines, electric mangles and electric vacuum cleaners, and a great many of the smaller fixtures that appeal to the housewife as well as to the man with the pocketbook. On the north side of the room is a twenty-six foot illuminated show case, within which are displayed art brass and towel bars, soap and sponge holders, mirrors, tumblers, etc.

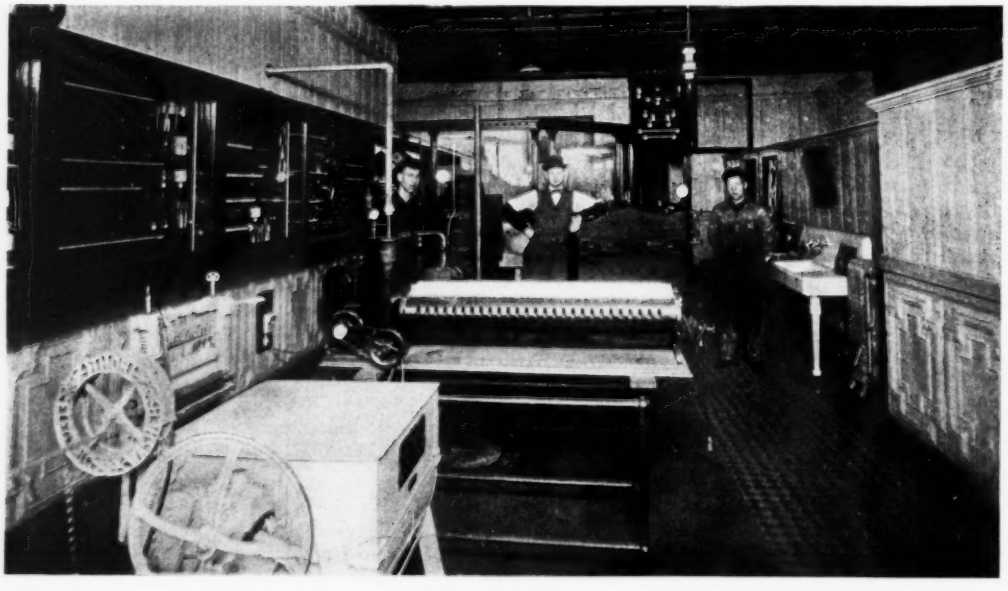
One of the noticeable things upon entering this showroom is the absence of the usual bathroom fixtures in the center of the floor or arranged along the walls. Mr. Stensrud has given considerable thought to the advantage of showing these fixtures as they are actually installed and has gone to a great deal of expense to fit up four bathrooms in an attractive style along the south side of the room, each bathroom being complete in itself and all of them being separated from the main showroom.

Each one of the bathrooms is brilliantly illuminated and decorated with handsome chandeliers, while large enameled iron flower pots containing fresh flowers are a part of the decoration of each.

The front bathroom, which is open and can be seen from the street, is finished in genuine white tile and presents a most beautiful appearance. In this room is a recessed porcelain enameled bathtub with water controlling valves through the wall, a vitreous lavatory and a concealed tank ventilated closet fitted with an absolutely sanitary white seat. Electric lights overhang the steel medicine cabinet and a handsome curtained shower bath hangs on the north side of the room. The fixtures and faucet handles in this room are mostly of china, which harmonizes with the white tiling, and does away with the usual nickeled brass. This makes a most sanitary bathroom and is easily kept neat and clean.

The second bathroom has a hexagon tile floor and imitation tile scratch plaster side walls. This room is fitted with a massive "Old Roman" bathtub, a heavy pedestal lavatory with latest pattern combination faucets and shampoo cocks, a vitreous china tank closet, and steel recessed medicine cabinet. The towel bars and soap and sponge holders compare favorably with the rest of the furnishings. This room also presents a most modern and sanitary appearance.

The third room has oiled hardwood floors and Georgia pine wainscoting, with plaster walls. This room is fitted



Show Rooms of Herman Stensrud, Marquette, Michigan.

with a four-inch roll rim tub with Ideal waste and Bell supplies, a handsome wall lavatory and closet with golden oak finish. A medicine cabinet, towel bars, tumbler holders, etc., help to make this room beautiful.

The fourth room has imitation hardwood linoleum floor and baked enamel side walls. This room contains a five foot guaranteed bathtub with ordinary nickeled brass faucets and waste, a corner wall lavatory and low down water closet. The towel bars, tumbler holders and soap dishes in this room are of nickeled brass.

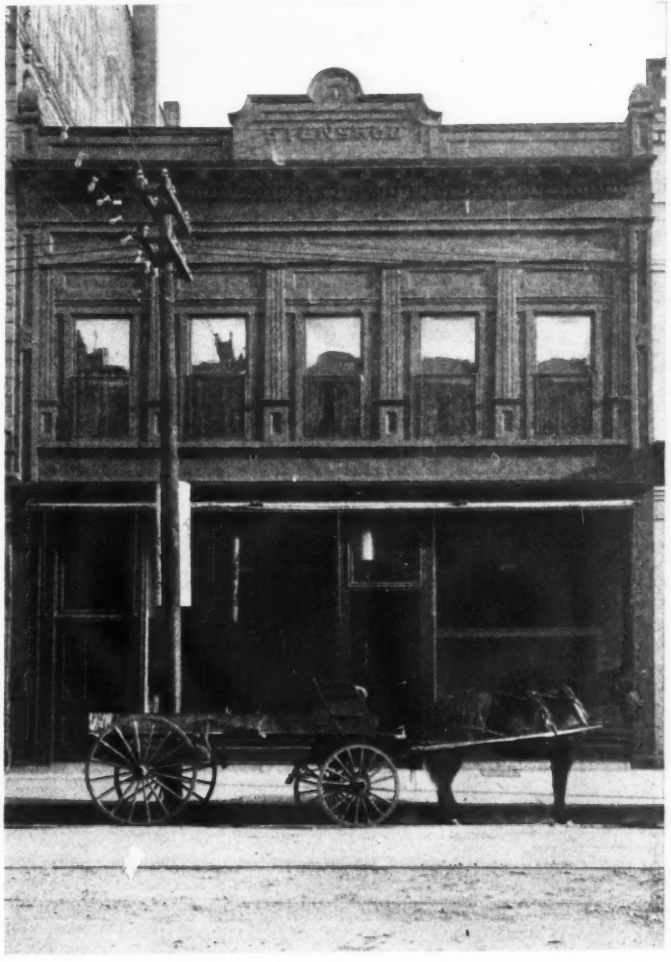
The idea in fitting the bathrooms up in this manner is to show the purchaser, whether he be of little means or a millionaire, what can be given him for a certain amount of money, thus enabling him to see how his bathroom will look when completed, this being a satisfaction to both the buyer and the plumber.

The office is located in the northeast corner of the show rooms. The side walls and fixtures are of solid oak, with paneled plate glass windows and doors. Desks and office fixtures are also of solid oak.

Mr. Stensrud believes in letting the public know what he can furnish them, and since he is some distance from a supply house, as well as from the manufacturers, he carries a considerable stock on hand.

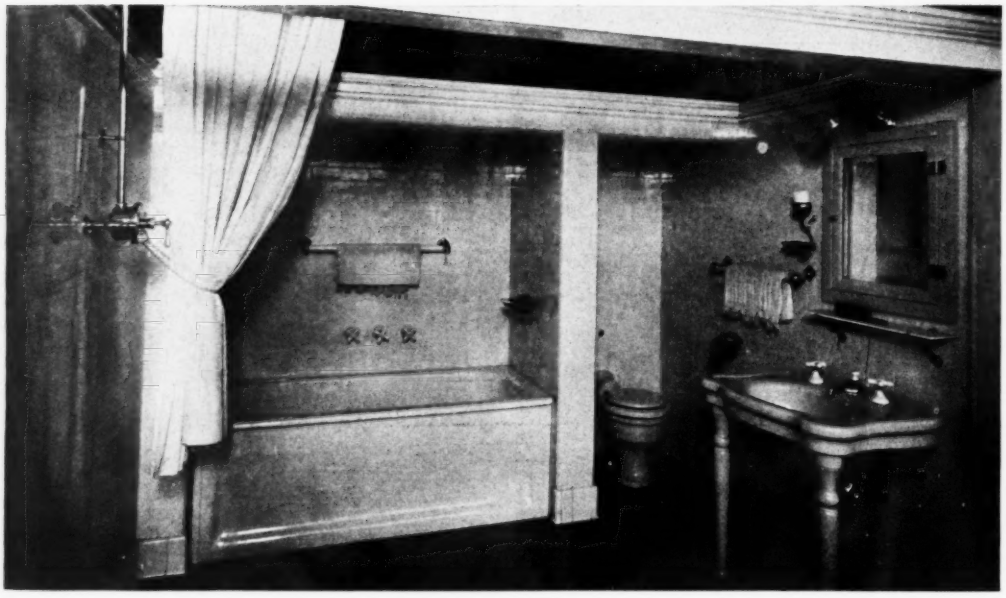
He says that these display rooms have already demonstrated that to sell high grade plumbing fixtures it is necessary for the customer to see them and to be told of their merits. He believes first in selling a job and then considering the installation, which is a matter of labor and can be handled much more easily than the salesmanship end of the business.

Mr. Stensrud recently issued a very attractive booklet, containing a large number of photographs of his display rooms and shop, which has been circulated among his trade in



The Stensrud Building, 311-313 South Front Street, Marquette.

Office of Herman Stensrud. Note Business-like Arrangement.



Bathroom Number One. Tile Floor and Walls, Highest Grade Fixtures.

Marquette and for many miles around. This has been productive of much good in the few months in which he has had a chance to use it.

Mr. Stensrud's experience has simply strengthened the opinion of many men in the trade that to become the recognized headquarters for high-grade plumbing work where supply house displays are not available it is necessary to give much attention to the showroom.

Not only is it easier to show a customer what you expect to furnish him, but the securing of new customers by attractive displays is one of the noticeable results of such effort.

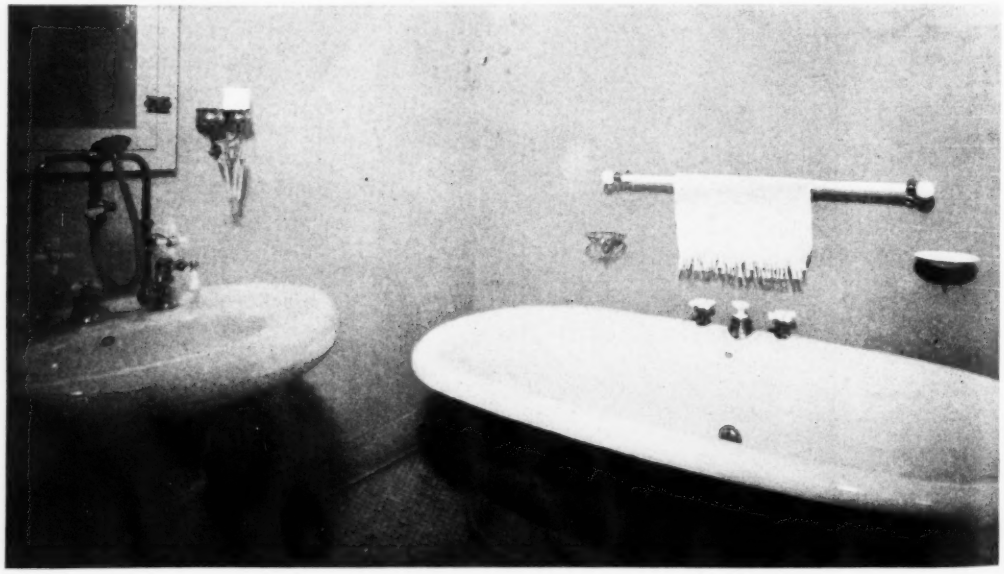
The modern department store has made display a fine art, and this has contributed immensely to its success as an institution.

The modern plumbing and fitting establishment can profitably pattern after such concerns, insofar as the attractiveness of the goods will allow.

The opportunity exists in every community where a plumbing or heating business can hope to prosper, for a clean, attractive display of the equipment that the customer should own. Much of the front room of almost any shop can be converted into an attractive display space if a little thought and study is given to it.

There is no doubt, also, that the use of separate bathroom displays has its effect on the buyer, who can thereby better judge of the general effect obtained, as well as see the kind of ware he is buying.

It is not possible for every plumber to fit up his place of business as attractively as has Mr. Stensrud, but every shop has its display possibilities, and there is little excuse for the presence of a lot of old drain fittings and dis-



Bathroom Number Two. Tile Floor, Walls in Scratched Plaster, Best Grade Fixtures.

Bathroom Number Three. Oiled Floors, Hard Pine Finish, Plaster Walls, Good Grade Fixtures.

carded brass goods in the front window and uncrated sinks in front of the door.

The buyer is interested in the attractive fixtures in their proper places, embellished with the accessories that he believes he should own. But to purchase these he must be reminded of them, and the display, before his eyes, is the silent reminder.

In fitting up such a display room, it is well to remember that the customer likes to see the fixtures in actual working order. He prefers to open a hot water faucet and actually see and feel the heat of the water. And if a gas water heater is there, he is apt to order it.

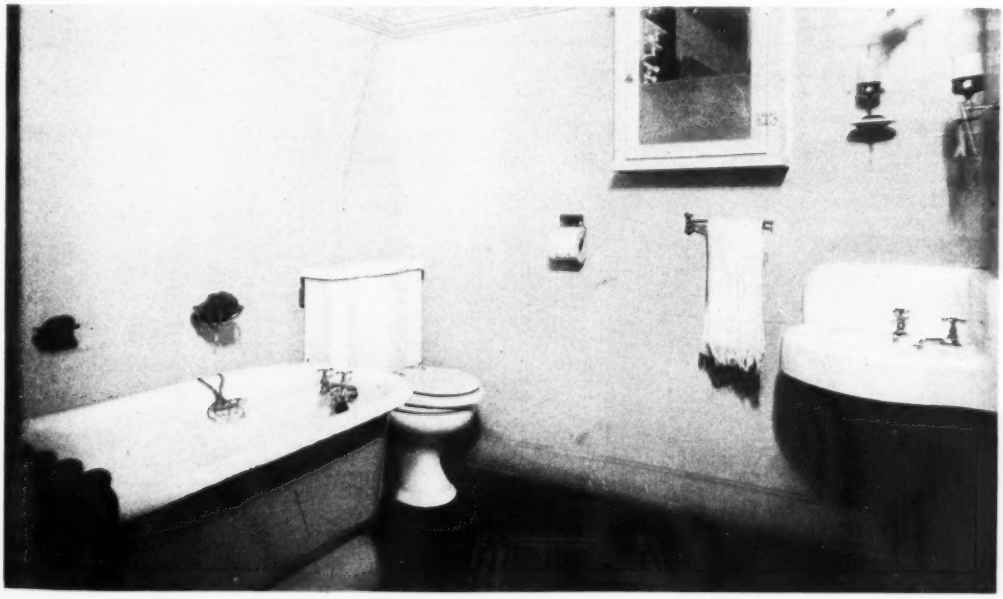
The movable displays, such as washing machines, pneumatic water systems and vacuum cleaners, should wherever possible, be connected up with power, that they may be demonstrated to the best advantage.

When an attractive display room has been provided, only one part of the work has been done. Not every possible customer comes voluntarily into your store.

Advertising the display, through the newspapers, by circulars and booklets, and by personal contact with prospective customers, is necessary to the greatest good of such a plan.

Mr. Stensrud has not stopped at simply fitting up his display rooms, but has made them known to every man, woman and child in that part of Michigan. He has gotten the public to talk about his enterprise, and he is reaping results that are visible in his bank account.

What Mr. Stensrud has been able to do in a town of only ten thousand, **you** can do in your own community. Perhaps your conditions are better than his—at any rate, why not give such a plan a tryout?



Bathroom Number Four. Imitation Hardwood Floor (Linoleum), Steel, Baked Enamel Walls in Imitation Tile, Good Grade Fixtures.

Increased Efficiency and the Motor Truck

The Use of the Motor Truck Among Plumbing and Heating Contractors, Manufacturers and Jobbers, is Rapidly Increasing

THERE are sound reasons for the man who seeks to increase his business and for the man who even hopes to retain his standing in this way, to look into the matter of delivery with care. These several reasons include promptness in making deliveries to customers and freight depots, in saving in cost of operation, and in avoiding delays that are so often encountered with a rush of business. The very nature of the industry makes the hauling of plumbing supplies and kindred lines one of bulk and weight above the ordinary. In order to make any real progress in the matter of delivery, not alone to customers, but to and from the stations, there must be promptness and a capacity for heavy loads.

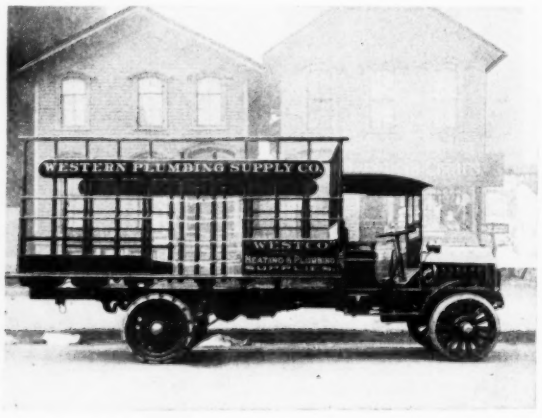
The conditions of the weather have likewise much to do with delays that are often costly to the operator, and to avoid any loss of time should be a matter for very careful thought. One notes with satisfaction that the use of the motor truck is fast finding more general use with the heating and plumbing fraternity and the supply men, and that there has been sufficient proof given to make the newer method of transportation satisfactory.

The New Up-to-Date Alco Truck, Just Built to Order for Weil Bros., Jobbers, of Chicago.

The use of the truck among manufacturers and jobbers in any industry has been of slow development. There has not been any great rush to adopt this means of delivery, and the increase in the use of the motor truck now is due solely to care and ample tests. However, the fact that such tests, for the greater part, have proven satisfactory is the best argument why there is merit in the truck for many industries. With the plumbing and heating industries the same care has been exercised by all those who have thus far adopted the truck as a means of transportation.

Opinions given by leading manufacturers and dealers, and by many of the plumbers are such as to convince the dubious mind of the satisfaction that has been noted with the adoption of the motor truck. The reasons, as expressed by these users, after several years' careful study of the matter, are summed up in a few words. Owing to the increased pulling capacity of the truck over that of horse power, the increased loading limit, the reduced cost of operation, the greater speed made in all kinds of weather, have combined to make the truck the ideal means of delivery for the heating and plumbing trade. Comparision has been made and the truck has outdistanced the horse vehicle several times in the above respects, and this has particular significance where there are long hauls to be made.

As has been noted with some other industries, the short hauls have not proven so notable in favor of the truck. The cost, time and general results have been, we might say, a trifle in favor of the horse vehicle. But the real tests must come where there are large loads, long hauls and speed demanded. In these there has never been any comparison between the two methods, the motor far outstripping the horse. It does not require additional men, and often fewer men can do the work with a motor truck, and accomplish far more than with the horse-drawn vehicle.



The New Large Kissel Truck, Just Purchased by the Western Plumbing Supply Co., of Chicago.

It must be remembered that within a few years, or we might say within the past year, there has been a decided advance made by manufacturers of motor trucks in their operation. Not only has the cost of operation been lowered with an improved vehicle, but the improved methods of manufacture have added to the durability of the truck, and consequently the cost of repairs has been minimized and a higher standard of efficiency attained. The speed has been increased, the running gears strengthened, and the general wearing qualities of the cars made superior to the older models.

The improvement in the cars has been made necessary from the fact that complaints were of frequent occurrence in the past, and the success of the motor truck as a means of rapid and satisfactory transportation, depended upon the improvements that were actually made. Complaints were secured, carefully weighed and noted and the evils that were the fundamental causes of the dissatisfaction eradicated. In this way was it possible to improve the cars, and to also increase their popularity. Records prove that there has been a vast increase in the use of the motor truck for business, and the number of

industries using them are so general as to cover every trade in the country.

The plumbing trade has been gradually awakening to the fact that there is virtue in this means of delivery. The number of users in the trade has as yet been lower than in some others, and the reason has been due to the lack of sufficient faith in the ability of the motor trucks to properly perform their obligations. One large firm in a big city now operates seven large trucks, and within the past three years has been keeping tests of the work accomplished with the use of the truck. These records have been ample to convince them of the desirability of the truck for their industry. This is further proven from the fact that all of their future delivery equipment will be motor trucks.

There are a number of cars made that are in a special way adaptable to the heating and plumbing trade. Naturally there is demanded, for the firms handling heavy materials, a durable car. These cars are made with a capacity from one to four tons, and there is no reasonable load that cannot be carried by the motor truck. At least one-third in time actually saved has been shown with the use of the truck with a heavy load. On long deliveries it is possible to make a delivery a day and return in time for a reload for an early morning run. This has been impossible with the horse vehicle.

For light work and rapid runs, there has been a material advance made with the adoption of the lighter truck. Hurry up calls and time saved on trips, are of the greatest moment to the heating and plumbing man. He understands the real value of the matter of time, and there has been a greater desire to lessen the cost of operation with his delivery department. In delivering material for a new building there is often a greater saving in time demanded than is possible with the horse vehicle. The motor car has proven the method and has saved many times its cost to the user.

It matters not as to whether the user of the motor truck is a large manufacturer, a jobber, or a retail or jobbing plumber. If he is a heating contractor, there have been many times where he can find the motor truck a material help to him. The motor car is always ready for instant service. It does not demand one-half the care and time that a horse requires, and the other points in its favor are ample to make it a much wider favorite with the trade.

The best recommendation that could be given the truck with the trade is the experience that others have had after several years of hard service. If there has been a test made that has proven its merit, then this should prove the best possible argument. If other lines of industry have found it of increased value, covering its several demands in a way that have proven amply adequate, then there should be little hesitation on the part of anyone from adopting it, and thus reducing operating costs and making possible increased efficiency.

At the Motor Truck Show held at the Chicago Coliseum last week the trade had an opportunity to personally inspect cars that were designed for almost any possible use to which the jobber, manufacturer or plumbing and heating contractor could put them. Big and little trucks for every purpose were there.

Among the cars exhibited were two intended for Chicago jobbers, one of these was a large Alco truck in three and a half-ton size for Weil Brothers, Chicago. The body of this truck was built to order by Jacob Fress & Sons, Chicago, especially for the use of this plumbing supply house. The illustration herewith shows one of the trucks already in use by Weil Brothers and the latest addition to their equipment will make a total of six Alco trucks now in use by this firm.

A large Kissel truck was also shown on the floor, lettered and ready for delivery to the Western Plumbing Supply Co., Chicago. This is a three-ton truck and was sold by the Chicago office of the Kissel Car Co.

The illustration herewith gives an idea of its size and adaptation for the particular work to which it is to be put.

SPONSELLER NEW PRESIDENT OHIO PLUMBERS.

As we go to press, telegraphic word comes of the election of the officers of the Ohio Master Plumbers' Association at the Toledo Convention, Thursday afternoon, February 20th.

The new president is F. W. Sponseller, of Canton, who

F. W. Sponseller, of Canton, Newly Elected President Ohio Association.

John F. Drees, of Cleveland, Retiring President, Ohio Association, now State Vice-President.

has been the president of the Canton local for some time. James A. Wood, of Toledo, formerly president of the Toledo local, was elected vice-president. Eb. Ellen, of Cleveland, who has so ably acted as secretary-treasurer, was re-elected. John F. Drees, of Cleveland, the retiring president, was honored as national state vice-president.

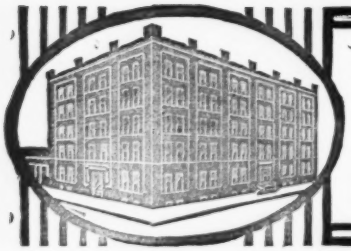
A full report of the proceedings of the three days' session, fully illustrated, will appear in next week's issue. **Look for it.**

ANNUAL CONVENTION OF THE INDIANA MASTER PLUMBERS' ASSOCIATION.

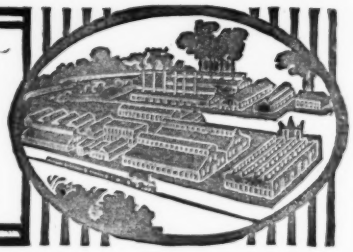
The seventeenth annual convention of the Indiana State Association of Master Plumbers will be held in Indianapolis next month. This promises to be one of the largest attended conventions held by the state organization in recent years, and no stones will be left unturned to make it the most beneficial, both from an educational and moral standpoint.

A new feature will be added to the convention in the way of an exhibit hall, which will be under the jurisdiction of the state officers; and the exhibit space will be sold to manufacturers who will give practical demonstrations of new appliances for the benefit of the delegates.

The exhibit hall will, in all probability, be in the same building as the convention hall, and will be open to the delegates on Monday afternoon, March 10th, at 1:30 and remain open until 11 o'clock that evening, and from 6 to 8 o'clock on Wednesday evening, and closed at all times when the convention is in session.



News of Interest Among the Wholesalers and Manufacturers



MEMBERS OF "BATHTUB TRUST" FOUND GUILTY AT DETROIT.

In the criminal prosecution of the members of the so-called "Bathtub Trust" in the Federal District Court at Detroit Judge Clarence W. Sessions on February 15th imposed fines ranging from $1 to $10,000 on the fourteen individuals and thirteen corporations who were defendants, and who were the day before convicted of criminal conspiracy under the Sherman Act.

The total amount of fines assessed was $51,007, which must be paid on or before March 1st. In case of the fines assessed against individuals not being paid by that time, a sentence of not to exceed six months for each in the Detroit house of correction would be imposed.

Sentences as Pronounced.

The sentences follow:

L. Wolff Manufacturing Company, Chicago, $5,000.

Standard Sanitary Manufacturing Company, of Pittsburgh, $10,000.

Barnes Manufacturing Company, of Mansfield, O., $1,000.

J. L. Mott Iron Works, of New York, $5,000.

McVay & Walker, Braddock, Pa., $500.

National Sanitary Manufacturing Company, Salem, O., $1,000.

Union Sanitary Manufacturing Company, of Noblesville, Ind., $1,500.

A. Weiskittel & Son Company, of Baltimore, $1,500.

Wheeling Enameled Iron Company, of Wheeling, W. Va., $500.

Humphryes Manufacturing Company, of Mansfield, O., now in the receiver's hands, $1.

McCrum-Howell Company, of New York, in receivers' hands, $1.

United States Sanitary Manufacturing Company, of Pittsburgh, which pleaded nolle contendere, $500.

Day-Ward Company, of Warren, O., in hands of creditors, $1.

Individual defendant's fines: Theodore Ahrens, E. L. Dawes and Francis J. Torrance, officers of the Standard Sanitary Manufacturing Company, $5,000 each.

T. R. Barnes, of the Barnes Manufacturing Company, $500.

Jesse T. Duryea, of New York, $1,000.

Frank G. Borden, of the National Sanitary Manufacturing Company, $1.

A. Weiskittel, of A. Weiskittel & Son Company, $1,000.

Herman Hoelscher, of the L. Wolff Manufacturing Company, $5,000.

Lloyd G. McCrum, of the McCrum-Howell Company, $1.

Howard T. Gates, also of the McCrum-Howell Company, $500.

J. E. Wright, of the Wheeling Enameled Iron Company, $500.

A. G. Ward, of the Day-Ward Company, of Warren, O., $1.

A. H. Cline, Jr., of the U. S. Sanitary Manufacturing Company, $1,000.

J. W. Arrott, also of the United States Sanitary Manufacturing Company, $1.

Statement by Theodore Ahrens.

In an authorized interview Theodore Ahrens, of Louisville, Ky., president of the Standard Sanitary Mfg. Co., one of the defendants, says:

"While we are disappointed at the outcome of the trial at Detroit, and especially at the excessive fines imposed by the court on the Standard Sanitary Manufacturing Company and its officers, we are glad the strain is over.

"We want to reiterate that we had no intention at any time of violating the laws of this country; that we acted under the best legal advice obtainable and that we therefore do not feel that we have committed any offense for which we ought to apologize or of which we ought to feel ashamed. It has been urged that the Standard Sanitary Manufacturing Company is a trust, but we would like to call attention to the fact that under the plan we proposed, and which the Government forced us to abandon, we attempted to protect both the small manufacturer and the small jobber and arrange it so that they had an even chance to do business with their larger and stronger competitors. If the object of the Government in enforcing the Sherman law is to protect the weaker and smaller concerns against the stronger ones, they have certainly in this instance accomplished directly the opposite effect. It was shown by the evidence in this case that we did not advance prices.

"As far as my own case is concerned, the public will, I hope, remember that Judge Angell, in the first trial, was ready to discharge me for lack of evidence, but not wishing to desert our associates and let them bear the brunt of it alone, Mr. Dawes, Mr. Duryea and I decided voluntarily to remain in the case to the end. We do not regret that we have done so.

"We have not yet decided whether we will appeal, but have advised the smaller manufacturers, against whom only light fines were imposed, not to appeal their cases, as the expense of this litigation has been very heavy and has become a serious burden to some of the concerns involved."

Comment by J. L. Sullwold.

In commenting upon the decision in a St. Paul paper, J. L. Sullwold, president of the Western Supply Co., of that city, says: "It shows that the government is doing something with these illegal combinations. I was a little in doubt as to the outcome of the case as I feared a disagreement. It will mean a great deal to all the plumbing supply trade. It will undoubtedly mean a reduction in cost to the purchaser of from 20 to 40 per cent."

AUGUST FROELICH PASSES AWAY.

August Froelich, one of the members and the founders of the plumbing supply firm of Froelich Bros., 142 North Seventh street, Philadelphia, Pa., died at his home in that city on Tuesday, February 11th, in his 56th year.

WILL MANUFACTURE HOT WATER HEATERS.

The Economy Heater Co., of Chicago, has been incorporated with a capital of $10,000 to manufacture hot water heaters. The incorporators are: A. B. Boughan, F. Getz and Robert W. Dunn.

WILL DEAL IN PLUMBING AND STEAM FITTING SPECIALTIES.

The Plumbing Sales Co., of Chicago, has been incorporated with a capital of $15,000 to deal in plumbing and steamfitting specialties. The incorporators are: William A. McGuire, Sidney J. Frank and John Fitzsimmons.

WILL MANUFACTURE HOT WATER HEATERS.

The Beauvais Water Heater Co., of Holyoke, Mass., has been incorporated with a capital of $200,000, to manufacture hot water heaters. The officers of the new company are: President, George C. Roberts; treasurer, John B. Beauvais; directors: John H. Beauvais and Ernest E. Beauvais.

HUDSON BOILER MFG. CO. TAKES OVER ABENDROTH BROS. BRANCH.

Abendroth Bros., Portchester, N. Y., have discontinued their branch office on Beekman street, New York City, and this business will hereafter be taken care of by the Hudson Boiler Mfg. Co., Aeolian Building, on 42nd street. A. S. Grant will have charge of the stove and range department and John Kane will look after the boiler end of the business.

BRUNELLE BOILER CO'S. BUSINESS SOLD TO CANADIAN SYNDICATE.

The business of the Brunelle Boiler Co., of 10 Coburn avenue, Worcester, Mass., manufacturers of the Brunelle steam heater, has been sold to a Canadian syndicate and will be removed to Three Rivers, Quebec. The Canadian concern is capitalized for $100,000 and the officers are: Joseph A. Jutras, president; John Boisvin, vice-president; Arthur Heroux, secretary, treasurer and general manager.

LEIGHTON SUPPLY CO. HOLDS ANNUAL MEETING.

The annual meeting of the Leighton Supply Co. was held at Fort Dodge, Ia., on February 11th, at which all of the old officers and directors were re-elected. A satisfactory cash dividend was declared and the balance of the profits were carried to surplus.

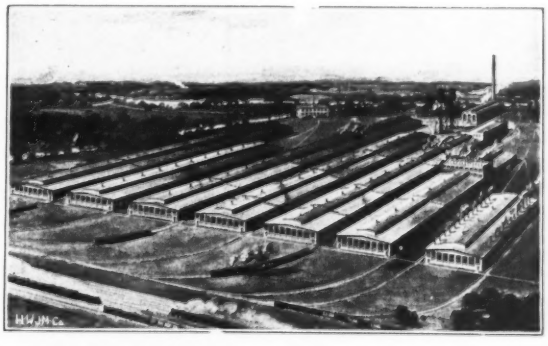
The business of the preceding year was declared to be in every way satisfactory and prospects for 1913 appear to be bright. The company now has eight men covering northwestern Iowa, going as far east as Waterloo and as far south as Des Moines. The officers of the company are: President, George Schnurr; vice-president, A. C. Heath; secretary and treasurer, E. I. Leighton.

ANNUAL MEETING OF NATIONAL SANITARY MFG. CO.

The stockholders of the National Sanitary Mfg. Co., of Salem, Ohio, held their adjourned annual meeting February 17th and elected the following directors: F. G. Borden, I. G. Dimond, Frank C. Moff, E. E. Hanna, J. C. Jobe, S. J. Shanabrough and S. Grove, jr. At a special meeting held after the election, an issue of $125,000 in bonds was authorized to provide the necessary money to increase the production of the plant by the installation of modern equipment for the handling of the product. The officers reported a very satisfactory volume of business for the year just closed and a most encouraging prospect for 1913.

NEW PLANT OF H. W. JOHNS-MANVILLE CO. NOW IN OPERATION.

The completion of the new plant of the H. W. Johns-Manville Co., at Manville, N. J., marks another important chapter in the history of this enterprising concern. Beginning with the consolidation of the H. W. Johns Mfg. Co. and the Manville Covering Co., in 1901, the H. W. Johns-Manville Co. has grown by leaps and bounds until today it has branch houses in practically every city of prominence in the United States and Canada, and representatives in almost all foreign countries. Its manufac-



H. W. Johns-Manville Co's. New Plant, at Manville, N. J.

turing plants are located in Brooklyn, N. Y.; Milwaukee and West Milwaukee, Wis.; Hartford, Conn.; Nashua, N. H.; Lockport, N. Y.; Jersey City, N. J.; and an asphalt refinery at South Amboy, N. J. Its asbestos mines at Danville, P. Q., Canada, are the largest in existence, and acknowledged to produce an exceedingly fine grade of asbestos.

The new Manville plant consists of nine buildings, which, together with their products, are classified as follows: A—Textile and packing. B—Rubber plant, electrical specialties and printing department. C—Pipe coverings. D—Paper mill. E—Magnesia. F—Roofing. G—Mastic and waterproofing. H—Roofing coatings, power plant and pump house. These buildings represent the most advanced ideas in fireproof construction, being of brick, steel and concrete, with roofs of J-M asbestos roofing. They are planned not only for safety but to afford the best operating conditions for the employes. The "daylight" form of construction which is employed throughout permits a flood of light to enter the buildings through large triple-unit windows placed close together. The walls, ceilings and uprights are coated with J-M fireproof cold water paint. Artificial illumination is provided in the form of

J-M linolite lamps and Frink reflectors. The hygienic conditions of this plant are ideal. Healthful ventilation is furnished by means of steel ventilating sash which provides a constant supply of fresh air without causing drafts. Owing to the judicious arrangement of the machinery, there is an entire absence of the crowding and confusion which, in many factories, serves to hamper the operators in their work.

Each building has an average length of 1,000 feet, and is a separate factory in itself capable of being operated as an independent unit without relation to the other buildings in the group. The total combined floor area of all the buildings is about 1,000,000 square feet. The buildings are heated by exhaust steam conveyed underground from the power plant through pipes laid in J-M sectional conduit.

The new plant is located on a picturesque tract of 320 acres, divided by the Raritan river, in the town formerly known as Findern, N. J., but which name was changed to "Manville." The company's private railroad system, comprising 5 miles of tracks, connects directly with the Central Railroad of New Jersey, the Lehigh Valley and the Philadelphia & Reading railroads, thereby insuring excellent shipping facilities.

About 3,000 men will be employed at this new plant, making a total of about 7,000 who are now employed by this company.

E. J. Barrick, formerly of Ruud Mfg. Co's. Kansas City office, has recently become connected with the Chicago office of the Pittsburg Water Heater Co., in the capacity of assistant manager.

J. C. Bowery, formerly representative for the Pittsburg Water Heater Co., at Louisville, Ky., has recently been promoted to manager of that company's office at 1305 G street, N. W., Washington, D. C. Edgar Morris has been installed at Washington as assistant to Mr. Bowery.

R. N. Trane, of the Trane Company, La Crosse, Wis., was in Chicago this week calling on some of his friends in the heating trade. On his way to Chicago he stopped at Madison, Milwaukee and Racine. He reported the outlook bright for a good spring season in the heating trade.

E. F. Glore, formerly manager of the Philadelphia office of the Richardson & Boynton Co., has been made general sales manager of the company, with headquarters in New York City. He has been succeeded at Philadelphia by Maxwell Gilbert, formerly city salesman of the same company.

T. E. O'Brien, vice-president and manager of the Leader Iron Works of Decatur, Ill., passed through Chicago on Tuesday of this week on his way to the eastern headquarters of the company at Owego, N. Y. He will spend several weeks in the eastern territory and with the New York City sales office at 15 William street. He will spend a few days at Detroit, Sarnia and Toronto also.

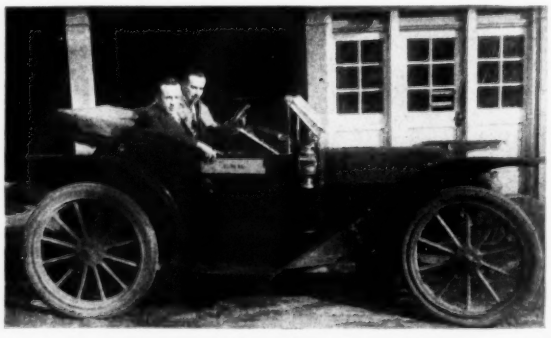
E. C. Lillie, of Denver, Col., the well-known manufacturers' representative in Colorado for heating equipment, was a Chicago visitor this week. He confidentially mentioned to "Domestic Engineering" that he must hurry home to look after the christening of his first granddaughter, whose arrival had occurred on February 15, during his absence on a business trip in the East.

G. L. Stephenson, master plumber, 842 Sherbrooke street, Winnipeg, called at the office of "Domestic Engineering" last week. He and Mrs. Stephenson are taking a few weeks' vacation from the worries of the plumbing business and in addition to a few days spent in Chicago expect to visit Washington, Philadelphia and New York, as well as Montreal, before returning home. Mr. Stephenson reports a prosperous year's business just closed and states that the prospects for 1913 were never brighter. He is afraid that he will have to cut short a portion of his trip in order to look after contract work that is already projected.

Claude W. B. Cornelius, president of the Cornelius-Hogg Co., Inc., of San Francisco, manufacturers of the "Co-Ho" line of plumbing specialties, was a Chicago visitor this week and called at the office of "Domestic Engineering." He is making a business trip to other eastern points, visiting some of the factories, and will spend some days in New York before returning to the coast. Mr. Cornelius states that his firm, though comparatively young in the business, did a much greater volume in 1912 than they had expected at the beginning of the year. He believes that the opportunities in the west are excellent and that the use of plumbing goods is not decreasing so far as he is able to determine. The prospective opening of the Panama Canal will undoubtedly help business and has already made itself felt in the increased demand for their goods.

TWO BRASS SALESMEN IN CALIFORNIA.

H. F. Sheridan, Pacific coast representative for the Central Brass Mfg. Co., of Cleveland, O., and E. M. Brown, Pacific coast representative for the United Brass Mfg. Co., of Cleveland, O., recently purchased machines



Two Brass Goods Salesmen in California.

in which to call on the trade in California. Mr. Brown selected a Krit and Mr. Sheridan an American Roadster. A few days ago they met in San Francisco, on which occasion the accompanying picture was taken in Mr. Brown's car. Both gentlemen report business conditions on the coast as being exceedingly good on account of the extensive preparations being made for the exposition in 1915.

Wilmington, Del.—Harry F. Mellon, a prominent master plumber of this city and for several years a member of the board of directors of the National Association of Master Plumbers, is receiving congratulations from his friends on his choice of a Christmas gift for his talented children. The gift in question was a prize "Shetland" Pony and cart, and the attractive vehicle with its youthful cargo, is seen frequently on the streets of Wilmington. It has been the subject of pleasant comment.

ATTRACTIVE WATER SYSTEM CIRCULAR.

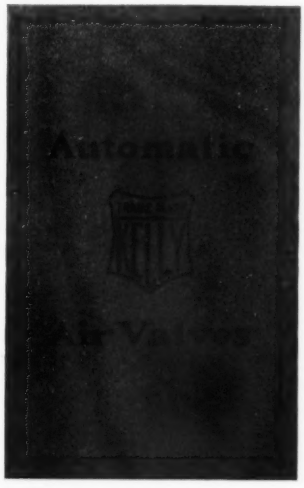
The National Steel Tank & Manufacturing Co., Bradford, Illinois, has just issued a most attractive circular in which is described their electric pneumatic water system with automatic control. The illustrations are of a high order and the information given will aid the dealer in selling such plants. A copy of this circular will be gladly mailed on request, upon mention of Domestic Engineering.

NEW BOOKLET BY CAHILL IRON WORKS.

The Cahill Iron Works, Chattanooga, Tenn., have just issued a new sixteen-page booklet, beautifully printed in colors, entitled "Southern Beauty Enameled Ware." Illustrated within its pages are the "Tennessee" and "Chattanooga" high grade sinks and the "Pacific" sink and laundry tray combinations, the original designs of which, as well as others illustrated therein, have been known to the trade for quite a while. Some of the illustrations, however, are new and appear for the first time in this booklet. This booklet is of convenient size to enclose in an ordinary business envelope and has a space at the bottom for imprinting purposes. A copy will be mailed to any master plumber requesting it, upon mention of "Domestic Engineering."

KELLY BRASS WORKS ISSUES 1913 CATALOGUE.

The Kelly Brass Works, 225-231 W. Illinois street, Chicago, manufacturer of automatic air valves and specialties, is sending out to the trade some interesting air valve literature in the form of a new catalogue. The front and back covers of the catalogue contain the same design, which is shown in miniature in this column. In describing "Class-A-Kelly" valves on page 4 of the catalogue, the

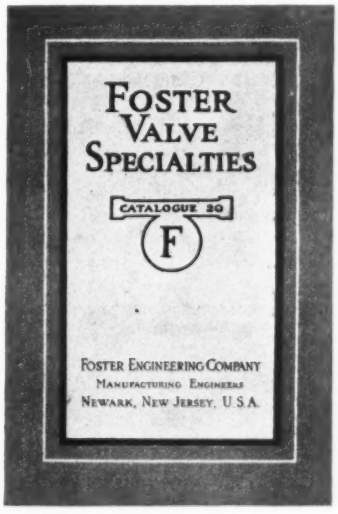


Cover Design of Kelly Brass Works New Catalogue.

manufacturers state, in part: "By unscrewing the plug at the bottom of the valve all the interior parts can be removed, cleaned and repaired, thus assuring the perfect operation of the valve at all times. The expansion post is made of the very best material and is of tubular form, loosely mounted on a brass rod extending through its entire length, thereby preventing the expansion post from buckling or bending and keeping it in perfect alignment. Any water of condensation in the valve will be drained back into the radiator through the drain tube." If your copy of this catalogue has not reached you, it will be sent upon request to the Kelly Brass Works at the address given above, mentioning "Domestic Engineering."

ISSUES INSTRUCTIVE CATALOGUE.

"Catalogue 20 F" is the title of a new book containing 114 pages, recently brought out by the Foster Engineering Co., Newark, N. J., manufacturers of pressure regulating and reducing valves and kindred engineering specialties. The accompanying illustration shows the front cover of this catalogue. The frontispiece is a half-tone engraving of the main office and works of the company.



Front Cover Design of Foster Engineering Co's. New Catalogue.

The catalogue is unusually well written so that the reader can readily understand its contents. The products of the company are classified in a unique manner, each being illustrated and described in a separate division. One of the most interesting of these divisions is devoted to the Foster low pressure regulators, class "Q" and "QH," which are very well known to the heating trade. The back part of the booklet contains a price list of parts for Foster valves, the Foster code, and several pages of general useful information for the plumber and fitter. A copy of this exceptionally valuable catalogue can be obtained from the manufacturers upon application, mentioning "Domestic Engineering."

NEW JERSEY JOBBER IS ENTHUSIASTIC ADVERTISER.

The plumbing supply jobbers doing comparatively local business have never been known as strenuous advertisers. The benefit to be gotten from advertising to the trade surrounding a given jobbing center is undoubtedly worth the effort. It remained for William S. Roe, 17-19 Mechanic street, Newark, N. J., to come out with a number of very attractive folders, which he has been sending to the plumbing trade in that vicinity, calling attention to his new catalogue and showing on the inside an attractive half-tone of this catalogue held in a customer's hand. The results of this advertising, Mr. Roe believes, will be felt in the season's business.

RAILROADS BUYING EQUIPMENT.

A significant feature of the iron and steel market this week has been the heavy buying of locomotives by the leading trunk line. The Pennsylvania Railroad has already ordered 100 locomotives from outside sources, and its Altoona shops have taxed their capacity in building both locomotives and cars. The Baltimore and Ohio R. R. is in the market for 100 heavy power locomotives, and the Chesapeake & Ohio has likewise signified its intention of buying a large amount of equipment. Car orders have been especially heavy. Pig iron buying has not been large, but the fact that prices have not weakened, except in a few special instances, is worthy of note. More pig iron is now being produced than consumed, the direct opposite to the conditions four months ago. Lower prices for coke are stimulating the blowing in of new stacks, but should these blow in it would seem that prices of iron must go lower. There is no large accumulation, and at present quotations there is no incentive for manufacturers of iron to make more than can be sold around present figures. No one is going to accumulate any large stock in these times. A potent reason why consumers are not buying is the fear of the general situation. With an upheaval in Mexico, which threatens to entangle this country, and Europe hoarding gold because of the Balkan war, merchants and manufacturers are disposed to go as slow as possible.

Quotations are as follows:

No. 2X Northern foundry, New York, $18.00 to $18.25.

No. 2 Plain Northern foundry, New York, $17.75 to $18.00.

No. 2 Southern foundry, Cincinnati, $16.50 to $17.00.

No. 2 Northern foundry, Chicago, $18.00

No. 2 Southern foundry, Birmingham, $13.50 to $14.00.

A BUYING MOVEMENT IN COPPER.

The producers of copper again lowered the quotation this week and on Friday it was possible to buy electrolytic at 15 cents. This is a level at which consumers have signified their intention of buying, and on that date some fairly large sales were made for March and April delivery. Whether the quotation will go any lower or not is a question, but the present price seems to be an eminently fair one, and it is the general belief that the buying movement will go further and a great deal of copper sold at around this level. European stocks are low and, while interests there are not disposed to buy, they will be compelled to in the very near future. A fairly active business may be expected for the next few weeks, and, while declines from even this level would not be impossible, any large decline is improbable, and it is believed the metal will seek a higher level before summer.

LEAD.

The market is steady and without change. There is a fair amount of buying for immediate consumption. Quotations are as follows: New York, 4.35 cents; St. Louis, 4.20.

SPELTER.

The market is steady and consumers are taking fair quantities, particularly the wire mills. In New York spelter is selling at 6.45 cents and in St. Louis at 6.30 cents.

February 24 and 25, 1913.—Annual convention of the Missouri State Association of Master Plumbers at Joplin, Mo., with headquarters at the Connors Hotel. The officers of the association are: President, Edward C. C. Reisel, St. Louis, Mo.; first vice-president, G. A. Wood, Springfield, Mo.; second vice-president, H. B. Schulte, Joplin, Mo.; treasurer, Jas. P. Carroll, St. Louis, Mo.; secretary, C. L. Smith, Kansas City, Mo.

February 26, 1913.—Winter meeting of the Central Supply Association, at the Hotel Sherman, Chicago. The secretary of the association is Paul Blatchford, 1915 City Hall Square Bldg., Chicago.

March 10 and 11, 1913.—The twenty-second annual convention of the Kansas Master Plumbers' Association, at Kansas City, Kan., with headquarters at the Hotel Grand. The officers of the association are: President, A. P. Elder, Ottawa; vice-president, W. S. P. Gill, Hutchinson; treasurer, F. H. Bowers, Emporia; secretary, E. D. Draper, 644 State Avenue, Kansas City, Kans.

March 10, 11 and 12, 1913.—Seventeenth annual convention of the Indiana State Association of Master Plumbers, at Indianapolis, Ind. The officers of the association are: Wm. J. Woolley, Evansville, president; H. H. Highlands, Gary, vice-president; A. E. Werkhoff, LaFayette, secretary-treasurer.

March 11 and 12, 1913.—Annual convention of the New York State Master Plumbers' Association at Buffalo, N. Y., with headquarters at Hotel Iroquois. The officers of the association are: President, Frank B. Lasette, New York City; secretary, John J. Hannegan, 161 Columbus avenue, New York City; executive clerk, John E. Dugan, 4 Monroe street, Albany, N. Y.

March 18 and 19, 1913.—Annual convention of the Michigan State Association of Master Plumbers, at Saginaw, Mich. The convention will be held in the Auditorium. The officers of the association are: President, George McCullom, Muskegon; vice-president, James O'Neill, Kalamazoo; secretary, W. A. Decker, Grand Rapids.

April 9, 1913.—Annual convention of the Massachusetts State Association of Master Plumbers, at Boston, Mass. The convention will be held at the Hayward assembly rooms. The officers of the association are: James S. Cassedy, Cambridge, president; Robert Robertson, Beverly, vice-president; John J. Vogel, Boston, secretary; O. S. Kendall, Worcester, treasurer; Richard J. Welch, Lowell, chairman executive board.

April 14 and 15, 1913.—First annual meeting of the National Pipe and Supplies Association, at the Hotel Sherman, Chicago. The general secretary of the association is George D. McIlvaine, of Pittsburgh, Pa.

April 15 and 16, 1913.—Annual convention of the Pennsylvania State Association of Master Plumbers, at

Pittsburgh, Pa. The officers of the association are: President, Chas. K. Will, Lancaster; vice-president, George W. Palmer, Lemoyne; D. F. Durkin, Jr., Philadelphia; Robert Purse, Johnstown; treasurer, John H. Birchall, Allentown; secretary, G. F. Reichmann, 241 West King street, Lancaster, Pa.

May 20, 21 and 22, 1913.—Annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers at Louisville, Ky. The officers of the society are: President, Thomas J. Claffy, City Hall, Chicago; vice-presidents, Dr. H. K. Beatty, Pittsburgh, Pa.; W. J. Yackley, Dayton, O., Charles M. McHugh, Cedar Rapids, Ia., R. H. Ellithorpe, Fresno, Cal., Jas. E. McGrath, Louisville, Ky.; secretary and treasurer, L. J. Lawler, Pittsburgh, Pa.

May 27, 28 and 29, 1913.—The fifth annual convention of the National District Heating Association, at Indianapolis, Ind. The officers of the association are President, R. D. DeWolf, Rochester, N. Y.; first vice-president, J. F. Lewis, Detroit, Mich.; second vice-president, J. L. Hecht, Chicago; third vice-president, E. Darrow, Indianapolis, Ind.; secretary-treasurer, D. L. Gaskill, Greenville, O.

June 5, 6 and 7, 1913.—Annual convention of the Colorado State Association of Master Plumbers, at Colorado Springs, with headquarters at the Antlers hotel. The meetings will be held in the chamber of commerce auditorium. The officers of the association are: N. W. Haas, Colorado Springs, president; J. C. St. John, Colorado Springs, vice-president; Peter Menzies, Denver, secretary.

June 23, 24 and 25, 1913.—Annual meeting of the National Association of Master Steam and Hot Water Fitters, at Niagara Falls, N. Y. The secretary of the association is Henry B. Gombers, 260 West Broadway, New York City.

MEETING OF FOX RIVER VALLEY MASTER PLUMBERS.

The Fox River Valley Benevolent and Social Club, composed of master plumbers belonging to the state association and engaged in business in the Fox River Valley, held its regular meeting Tuesday, Feb. 11, at Oshkosh, Wis. The meeting was called to order shortly after 3 o'clock, with a large attendance present. Very interesting talks were given by former State President Geo. F. Reeke and others, and the secretary read the new orders on sanitation that were adopted by the State Industrial Commission January 16, 1913, to go into effect February 20, 1913. This report, and especially that pertaining to plumbing installation, is very important to the plumbing fraternity, and every master plumber in the state of Wisconsin ought to acquaint himself with the new rulings. Copies may be had by addressing the State Industrial Commission, Madison, Wis., and asking for "Bulletin on Sanitation."

The Oshkosh plumbers gave the visiting plumbers a royal reception, and when they departed for their respective homes they all expressed themselves as being more than pleased, and that the few hours thus spent in a social way help to promote a friendly feeling which should exist in every local, or district organization.

The next meeting of the club will be held the first Tuesday in April, at Fond du Lac. The election of officers will take place at that meeting.

The present officers of the club are: President, Al Delforge, Green Bay; vice-president, J. Geo. Mueller, Oshkosh; secretary, John P. McCoy, Fond du Lac; treasurer, W. S. Patterson, Appleton.

FEBRUARY MEETING OF MASSACHUSETTS CHAPTER A. S. H. & V. E.

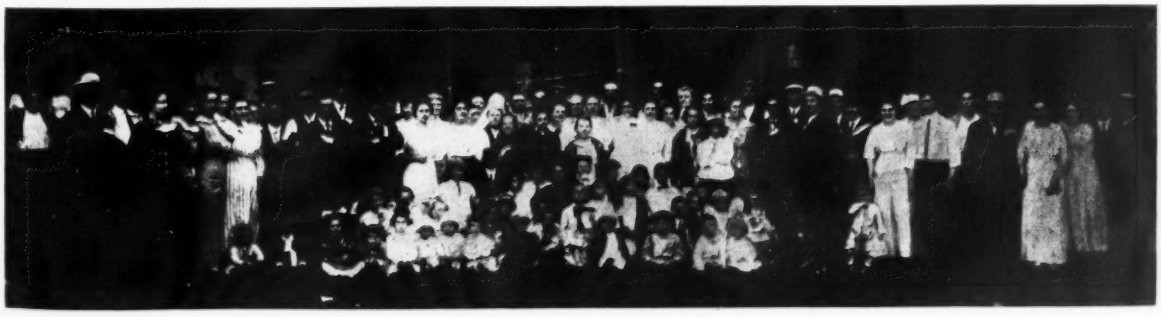
The regular February meeting of the Massachusetts Chapter of the American Society of Heating and Ventilating Engineers was held at Boston last week. There were nine members present—Messrs. Morrison, Myrick, Smallman, Franklin, McKenna, Cooper, and three guests.

The subject of a law governing motion picture theaters was under consideration and was laid on the table until the March meeting, as this is an important matter.

The legislative committee, Messrs. Cooper, Myrick, Frankln and McKenna, after conferring with others interested, drafted a bill which is entered as "Senate 115, Relative to the making and awarding of contracts by counties, cities, towns and commissions thereof," for the separation of the heating and ventilating contracts from the general or other contracts, and the adjourned hearing is set for February 18th, before the municipal finance committee.

DELEGATES ELECTED BY THE SYRACUSE ASSOCIATION.

At the meeting of the Master Plumbers' Association of Syracuse, N. Y., on Tuesday evening, February 11th, an election of delegates and alternates to the state convention at Buffalo on March 11th and 12th was held. The delegates elected were the following: August Schall, Rhoda McGraw, E. B. Dunkerton, M. F. Burke, T. X. Donovan, P. F. McDonald, Wm. Drexel and I. G. Ward. The following were the alternates elected: A. M. Vandenburgh, Chas. A. H. Kienzle, Fred W. Soper, E. J. McCarthy, John J. Reidy, John Oswald and E. G. Houde.



Members of the Fox River Valley Benevolent and Social Club and Their Families at a Most Enjoyable Outing Last Fall.

Annual Banquet of the Pittsburgh Association

SUCCESS marked the second annual banquet of the Master Plumbers' Association of Pittsburgh and vicinity, which was held in the English room of the Ft. Pitt hotel, on the evening of February 17. It was also the first time the ladies were the special guests of the association, and this only added beauty and charm to the affair. So successful was the second banquet, that the officials of the association contemplate holding these social sessions at shorter intervals than once a year, believing that by so doing the master plumbers will form a bond of fellowship that cannot be severed.

The banquet was arranged by a committee composed of W. H. Rowswell, chairman, Jacob Soffel, George Rodgers, John Paul, S. S. White and E. M. Tate. Only three speakers were arranged for and because of an unforeseen circumstance, one of the speakers, Dr. E. R. Walters, director of the bureau of health of Pittsburgh, was unable to attend. He was to speak upon "Health and Sanitation."

any need to "get his hammer out" and knock other members for what they did at a meeting. "Come into association work with a will," said Mr. Will. "Get into the harness like my friend White and a number of others have done during the last twenty years, and help the wheel horses of the association who have done so much in the past for your good now. You should also learn how to uphold prices, and not to knock them down. The association tells you how this should be done, and how it is being accomplished. If you are a member of the association, and do not take an active part in its welfare, then you are losing a great opportunity to help your own self in a business way, and the association as a unit is also losing your aid, which it at all times requires. While you can help the association, it in turn can help you to better work, and also financially."

Jacob Soffel, an active association member, delivered an interesting address on the subject of "Organization."

The Second Annual Banquet of the Master Plumbers' Association of Pittsburgh and Vicinity.

S. S. White, ex-president of the Pennsylvania State Association, was toastmaster, and he did his part well. He is a capital story teller, and he kept the gay throng in a happy humor throughout the evening. Mr. White was introduced by E. M. Tate, the genial secretary of the Pittsburgh Association.

Mr. White showed his pleasure of the presence of the ladies at this banquet by making the urgent suggestion that the association from now on plan to hold social affairs more than once a year, and that to each of these the fair sex be invited. He declared that by so doing the master plumbers would get better acquainted with one another, and that it would result in good for all. He then introduced C. K. Will, of Lancaster, Pa., president of the Pennsylvania State Association of Master Plumbers, who had been assigned to speak upon "Our Association."

Mr. Will laid special stress upon the part the younger members of the association should take in organization work. He urged every new member to attend all meetings and learn what would be of value to him in his everyday business life, and that by so doing he would not have

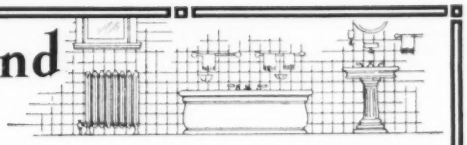
"Without an association, no work can be carried on to a successful end," declared Mr. Soffel. "There must be unity among the members and the plumbers as a whole. They must be of one accord, and work for the success of others as well as for themselves."

The close of the banquet was given over to a number of brief speeches by the different members.

President F. J. Hanley was among the last list of speakers, and the interesting statement was made by him that the master plumbers of Pittsburgh and vicinity planned to have the whole of Allegheny county identified with the association. He declared that it was also planned to have district meetings, either weekly, bi-monthly or monthly, where the plumbers of a certain territory could get together for their individual good.

Brooklyn, N. Y.—The H. F. Meistrell Heating Co. has been incorporated to conduct a general heating business. The incorporators are: Henry F. Meistrell, Joseph N. Meistrell and S. G. Meistrell, all of Brooklyn. The capital stock is $10,000.

Among the Plumbing and Heating Contractors



Illinois

Chicago.—The formation of a society or association of plumbing inspectors in western Canada is now being seriously contemplated according to a letter received by Asst. Chief Sanitary Inspector Claffy of Chicago from James Smith, plumbing inspector of the city of Winnipeg, Manitoba. The letter also states that reforms in ventilation are being urged in Winnipeg. The communication reads:

"Dear Sir:—Referring to yours of the 27th inst., I am still waiting receipt of that copy of your ordinance on "Ventilation of Buildings" which you promised to try to send me. I am rather anxious to get this as I believe yours is the only city so far which has attempted to do anything in the way of ventilation of buildings by ordinance, and I have recently recommended that the city of Winnipeg get power to control both the heating and ventilation of buildings, so that if this power is granted to the city it will be up to me to draw up an ordinance covering the matter and if I had your ordinance before me my task would be rendered less difficult. You will be interested to know that in response to a number of requests from plumbing inspectors throughout Western Canada it has been decided to hold a convention for plumbing inspectors and other interested parties, in Winnipeg about the middle of April. The principal business of the convention will be the formation of a society or an association, and it is also proposed to devote considerable time to the discussion and assembling of a uniform Plumbing code for Western Canada.

Very sincerely yours,
James Smith,
Plumbing Inspector."....

William G. Stout and Herman L. Schultz master plumbers of St. Paul and Minneapolis respectively were in Chicago recently to call on the plumbing supply houses. They report trade conditions brisk and on the upward trend in the Minnesota cities.

Minnesota

St. Paul.—The Builders' Exchange of St. Paul held its annual banquet at the Ryan Hotel on January 27th. One of the largest crowds ever assembled at a banquet of its kind being in attendance. Builders and contractors from several smaller cities in the state were visitors. President Vincent of the State University was the principal speaker, preceded by Alderman Levitt Corning and Mayor H. P. Kellar. United States mail carriers in full uniform delivered "parcel post" packages, properly stamped, to each delegate, in which was found two cigars and a small steel tape line. The menu was very attractively written up in the form of an architect's specification.

Richard M. Knox, 465 Bancroft street, is installing a heating plant for the Craftsman Building Co. at Finn and Goodrich avenues. He is also remodeling heating plants for J. C. Jones at 205 McAlester avenue, and for Geo. H. Hamilton at 892 Lincoln avenue.

Art Swenson, 916 Case street, was awarded the plumbing and gas fitting in a new residence for F. C. Cooke, to be built at Lincoln and Hamlin avenues.

J. J. Bailey, 446 Jackson street, is installing the plumbing and gas fitting in a duplex flat for Kovantinetz Bros., at 644 Ashland avenue.

Baird & Sudheimer, 106 Iglehart street, were awarded the plumbing and sewage work in a residence at White Bear Lake that is being remodeled for A. H. Stein.

Paul Chapel, 189 W. Third street, is remodeling some of the plumbing work in the court house and city hall.

Show Room of Wadena, Minn., Firm.

J. M. Robb & Co., has an up-to-date plumbing establishment in Wadena. Although the company has been in business but a comparatively short time, the business done extends over quite a territory and it is expected

Corner of J. M. Robb & Co's. Showroom and Office at Wadena, Minn.

that a large amount of city as well as country work will be done this coming season. L. B. Robb, the gentleman in the picture, looks after the office and collections, while J. M. Robb will put his new automobile to good use in getting from town to town and getting from farmer to farmer, estimating contracts and looking after the work.

Indiana

Sullivan.—State President Wm. J. Woolley visited this city on Monday, Jan. 20, and called on local plumbers, who reported work very brisk. While here Mr. Woolley secured applications for membership in the Association from Long & Warren and H. Schmidt & Son, two of the leading firms of this city.

Terre Haute.—At a recent meeting of the local Association of Master Plumbers, the following members were elected for the ensuing year: John M. Feritag, president;

Lyman Williams, vice-president; Anton Prox, treasurer; Chas. W. Wissel, secretary.

On Monday night, Jan. 20, a special meeting of the Terre Haute Local was called to entertain State President Wm. J. Woolley, who was in the city on an organizing trip through the southern part of the state. Mr. Woolley made a talk before the association, reviewing in part the work accomplished by the state and national associations during the past year. He urged the local members to attend their meetings, and the officers to take active part in developing sanitation in their locality.

Indianapolis.—Association affairs in Indianapolis have taken on a boom, and Indianapolis now boasts of having over fifty members. A campaign for new members was started here Tuesday, Jan. 21. Tuesday night a rousing meeting was held in the local association rooms. State President Wm. J. Woolley, at the request of Local President Geo. A. Geis, introduced Mr. Carl Stein, of Chicago. Mr. Stein said in part:

Gentlemen: It gives me great pleasure to be with you this evening and meet some of the prominent master plumbers of the state of Indiana. I have been delegated by our national president, Mr. Frank J. Fee, of New York, to co-operate and assist your state president, Mr. Woolley, in doing some missionary work among some of the smaller towns throughout the state, and I trust the result of our joint efforts may prove beneficial and strengthen our association in this section of the country. While I have no personal message to convey to you from our national president, I may say to you, as a member of the National Board of Directors, that our national association, as stated in his recent letter (December 6) to the presidents of local associations, urges upon them to make a special effort to have every legitimate master plumber in your locality become a member of your local, as you all know that in unity there is strength and stability.

There are many evils which confront our trade which can only be eradicated through united efforts on the part of our members and one of the greatest of these is the irresponsible general contractor. Steps should be taken by every state and local association to free our members from this growing menace to our business. What, may I ask, are you doing locally to check the evils of subcontracting? In the proceedings of the Salt Lake City convention you will note that the state of New York was successful in having enacted a law providing that in all public work for municipal, county or state, the plumbing and heating contracts must be let separately. Do you think that a similar law would prove beneficial in your city or state? We have been able through persistent effort to get the city of Chicago to let its plumbing contracts separately, and I can assure you that in our case it has proven beneficial. We have not yet been able to get the state of Illinois to let the plumbing of its new buildings separately, but we hope in the near future to be able to effect this reform, either through an act of our legislature or through the State Board of Administration. It is the intention of our national president to institute an active national campaign in conjunction with the Legislative Committee to cure this evil and I hope he will have your hearty support.

Last year I had the honor of being chairman of your National Sanitary Committee and printed copies of the report have no doubt been placed in the hands of your local and state health officers. The sanitary condition of some of the public buildings, parks, etc., through the country, as shown by the statistics gathered, are in deplorable shape, and it should be the duty of our associations throughout the country to take up the question with the proper local authorities, with a view that sanitary arrangements and ample plumbing facilities should prevail in every city. We should also advocate Public Comfort Stations and appoint a special committee in each local to promote this idea.

The question of a national organizer has been the subject of debate at a number of conventions. At the Salt Lake City convention Mr. Braden, of Texas, suggested that the time was opportune for a national organizer or educator, and proposed to increase the national per capita tax to provide for the expense of such an officer. The delegates concurred in the views of the Committee on Resolutions, that a national organizer could not cover the United States and the suggestion that the question be taken up by state association. It would be well for locals to discuss the proposition in anticipation of the subject being taken up at the state convention.

In conclusion, gentlemen, to quote our national president, "Let's be progressive and work unitedly in making the present year one of the most notable in the history of our association." If each member will only do a little, much good can be accomplished by the association. Let us hope the year will not only be notable in sanitary advancement, numerical strength, but in more effectively safeguarding our business interests.

At the conclusion of Mr. Stein's speech, Mr. Woolley spoke at length on the work accomplished by the state association, and expressed his views of how a local association could be run to advantage to its members. Both gentlemen were roundly applauded at the conclusion of their talks, and that their message went home was evident by the number of men who joined the local before departing.

Messrs. Stein, Woolley and Geis continued their organizing work throughout the week.

Bedford.—The firm of J. J. Quinn & Co. is still busy completing last year's business. Among other jobs this company is putting the finishing touches on the plumbing and heating in the Bedford high school and two grade schools in this city, the aggregate contract amounting to $26,750. This firm has been awarded the contract for the plumbing in the Brazil court house at Brazil, Ind., contract price $5,000.

Tennessee

Memphis.—The plumbing supply houses and the contractors report that business has been a little quiet the past month, but it is slightly improved with the advent of February. Repair business is holding up well, but it is not the most satisfactory character of work. The heating trade is relatively better than plumbing. The rough weather has interfered with new construction work. Among the master plumbers there is a strong inclination obvious now to pay more attention to meetings and to the social side. The local people have been reorganized and harmony exists among the trades.

The Southern Heating Co., Jefferson avenue, reports that the 1913 season is opening very well. They are doing the contract of steam heating on a large Masonic Temple for the York rite Masons. Jas. Alexander & Co., of Memphis, are the general contractors.

Hanley & Casey Co., of Chicago, have the plumbing and heating contract on the new Chisca hotel here. This

hotel, to be the largest in Memphis, will have perhaps 300 bathrooms besides the general lavatories.

The Hughes Heating Co. is installing the heating system for the Mississippi Valley Trust Co. in this city. This company also has the heating contract for a six-story building for S. C. Toof & Co. on Madison avenue.

J. F. Whittaker has moved his plumbing place from Union avenue to 163 Court avenue, where he has a neat and convenient place.

Hughes & Harris, Poplar avenue, report the outlook very good for Memphis business, but state it has been extremely quiet during the winter.

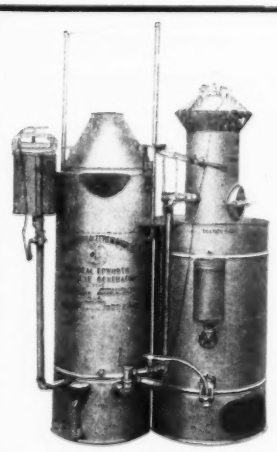
Nashville.—J. S. Moore has opened a new plumbing business at 55 Bridge avenue.

McKenzie.—J. N. Robertson is doing the plumbing work, including closets and lavatories, on the new $10,000 freight depot of the Nashville, Chattanooga & St. Louis R. R., in this town. He will also do some plumbing work for the L. & N. R. R. at the same place.

Massachusetts

Boston.—President James S. Cassedy, of the Massachusetts State Association of Master Plumbers, has announced the date of the annual convention and election of officers as April 9. The convention will be held in Boston. The annual "night before" gathering and banquet which has been eliminated for the past few years is to be revived this year.

Boston.—A bill to provide that building contracts made by public boards shall be split so as to allow the plumbing, heating and ventilating work to be bid for separately, was discussed at a hearing before the committee on municipal finance of the Massachusetts legislature. There were a large number of men connected with the several trades concerned present, many of whom argued that under the system of awarding the entire contract to one person they were not being treated fairly and the board contracting for the work was being defrauded. The sub-contracts were put out at such a figure, they said, that the contracting boards were frequently cheated by the substitution of poorer material. The large contractors sometimes failed between the time of receiving their money and settling with the sub-contractors also, witnesses said.



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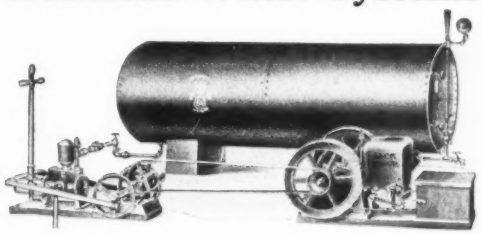

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WANTED—TWO FIRST-CLASS PLUMBing specialty salesmen for the Central States. Address Box 928, care of "Domestic Engineering," Chicago. 2-22

WANTED—CAPABLE, EXPERIENCED, outside plumbing goods salesman; southern California. State age, experience and salary expected. Permanent position. Answers confidential. Address "Wholesale Plumbing," P. O. Box 648, Station C, Los Angeles, Cal. 2-15, 22

WANTED—PLUMBER WHO IS CAPAble of doing both heating and plumbing; must be strictly temperate; married man preferred; wages $18 per week the year 'round; good position to the right party. E. V. Lombard, Lake City, Minn. 2-15, 22

WANTED—EXPERIENCED MAGAZINE Subscription Salespeople who can forcefully and convincingly present the varied features of technical magazines, to travel Southern States this winter. Bond and references must be given. Commission contract worth $100 to the right party. Address Box 897, care of "Domestic Engineering," Chicago, Ill. tf

WANTED — RELIABLE ADVERTISING solicitors. P. O. Box 298, Chicago, Ill. 2-15-22

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For Sale

A SNAP—PLUMBING AND HEATING business, established for twenty years and located in best city in southwest, for sale. Reason—retiring from business. Address Box 919, care of "Domestic Engineering," Chicago, Ill. 2-1, 8, 15, 22

Miscellaneous

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf.

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